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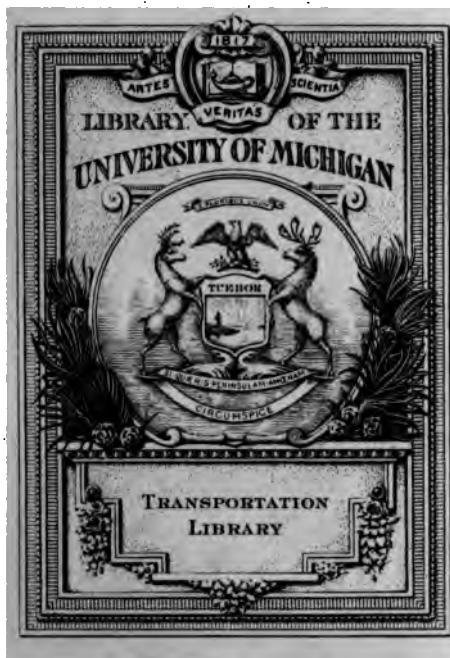
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TRAIN RULE
EXAMINATIONS MADE EASY
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**OUTLINE MAP
WITH DIALS SHOWING
STANDARD RAILWAY TIME
COMPARED WITH GREENWICH MEAN NOON.
ADOPTED NOVEMBER 19, 1889.**



Train Rule Examinations Made Easy

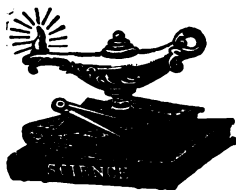
A COMPLETE TREATISE

For Train Rule Instructors, Superintendents, Train-
masters, Conductors, Enginemen, Brakemen,
Switchmen, Train Dispatchers,
Operators and Others

Gives reliable information of the Standard Code of Train Rules.
Explains fully the application of Train Orders and Rules.
Shows Signals in Colors. Every detail is covered
and puzzling points explained in simple
and comprehensive language.

By **G. E. COLLINGWOOD**

*Author of "Standard Train Rule Examination,"
"Questions and Answers," etc.*



CONTAINS COMPLETE SET OF EXAMINATION
QUESTIONS, WITH THEIR ANSWERS

NEW YORK

The Norman W. Henley Publishing Company
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1911

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place of the rulings which the management of any road sees fit to make. This book is intended to make the rules clear, giving information which it is impossible for any railroad company to incorporate within a book of rules, explaining the rules and the reason for the different rules in such a manner as to be of special value in assisting examining officers to thoroughly explain the rules in detail, and also to thoroughly prepare trainmen to pass an examination with credit to themselves and their department.

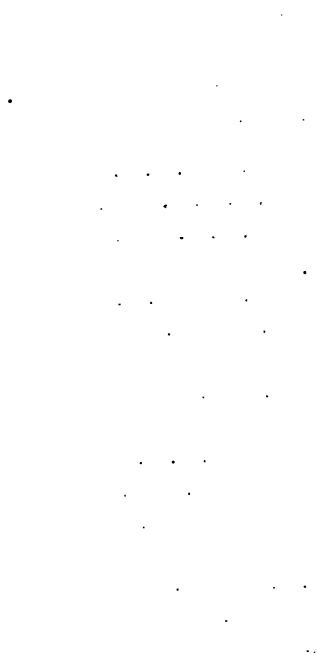
In looking up special points the index will be found of great value as it enables the student to turn to any subject instantly.

G. E. COLLINGWOOD.

June, 1911.

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TRAIN RULE EXAMINATIONS MADE EASY

American Railway Association

The American Railway Association was organized for the purpose of discussing and recommending methods for the management and operation of American Railways. Unlike most bodies of this nature its action is only recommendatory and not binding on any member. Its membership consists of common carriers which operate American steam railways. Companies operating more than one thousand miles of road are entitled to one membership for each one thousand miles. Companies which operate less than one hundred miles of road, those whose roads are operated solely by electricity, or which are located elsewhere than in the United States, Canada, or Mexico,

may be admitted as associates, but cannot be admitted as members.

The Association has been of great service by developing the Standard Code of Train Rules, Block Signals, Rules for the Interchange of Cars, etc. This Association grew out of what was known as the General Time Convention, which in the year 1883 perfected what is known as Standard Time, of which we shall treat in another chapter.

The Standard Code of Train Rules

The Standard Code of Train Rules is the product of the American Railway Association. Before the Standard Code made its appearance there was no uniform system of rules; each road had a system of its own. Train dispatchers were permitted to send train orders in any form they desired which resulted in many of the orders being misunderstood. With the adoption of the Standard Code a system of train order forms was introduced with an explanation following each form so that there is at present a small chance of train orders being misur

stood so long as the prescribed forms are followed. However, when two or more forms are combined in one order the explanation is not given and it is one of the objects of this book to fully explain such combinations as are generally used.

The Standard Code has been revised from time to time, as imperfections have developed, until it is now a fairly clear and concise statement of necessary operating regulations. At present nearly all of the roads in the United States are operated under the Standard Code. However, most of the roads make minor changes in the rules to meet the requirements of the road or its management.

Standard Time

Before the year 1883, when Standard Time was adopted, there were upwards of fifty different standards of time in use in the United States. Each road had a time of its own; some of them used several different times in getting a train over the road. The confusion resulting from such a condition can hardly be imagined.

Both the public and the railroads suffered because of it, until a method of Standard Time was worked out and adopted.

There are now four Standards of Time in the United States, known as, Eastern, Central, Mountain, and Pacific. They are all an even hour apart and based upon the 75th, 90th, 105th, and 120th meridians. When it is 12 noon at Philadelphia it is 11 A.M. at Chicago, 10 A.M. at Denver, and 9 A.M. at San Francisco. The dividing points between the Standard Time sections are as follows:

Between Central and Mountain Time Sections

Alliance, Neb.

(Mountain time is used locally.)

Central time—Chicago, Burlington & Quincy. Lines west of the Missouri River (East of Alliance).

Mountain time—Chicago, Burlington & Quincy. Lines west of the Missouri River (West of Alliance).

Arcola, Saskatchewan.

Central time—Canadian Pacific (East of Arcola).

Mountain time—Canadian Pacific (West of Arcola).

Broadview, Saskatchewan.

(Central time is used locally.)

Central time—Canadian Pac. (East of Broadview).

Mountain time—Canadian Pac. (West of Broadview).

Chamberlain, S.D.

Central time—Chicago, Milwaukee & St. Paul (East of Chamberlain).

Mountain time—Chicago, Milwaukee & St. Paul (West of Chamberlain).

Clovis, N.M.

Central time—Santa Fé Route (East of Clovis).

Mountain time—Santa Fé Route (West and South of Clovis).

Dodge City, Kan.

(The city uses Central time.)

Central time—Atchison, Topeka & Santa Fé (East of Dodge City).

Chicago, Rock Island & Pacific.

Mountain time—Atchison, Topeka & Santa Fé (West of Dodge City).

Ellis, Kan.

(Central time is used locally.)

Central time—Union Pacific, Kansas Div. (East of Ellis).

Mountain time—Union Pacific, Colorado Div. (West of Ellis).

El Paso, Tex.

(See also Rio Grande, Tex.)

(Mountain time is used locally.)

Central time—Galveston, Harrisburg & San Ant. Texas & Pacific.

Mountain time—Atchison, Topeka & Santa Fé.

El Paso & Northeastern.

City of Mexico time—Mexican Central.

Hoisington, Kan.

(Central time is used locally.)

Central time—Missouri Pacific (East of Hoisington).

Mountain time—Missouri Pacific (West of Hoisington).

TRAIN RULE

Hudson Bay Junction, Sask.

Central time—Canadian Northern (East of Hudson Bay Junction).

Mountain time—Canadian Northern (West of Hudson Bay Junction).

Kamsack, Saskatchewan.

Central time—Canadian Northern (East of Kamsack).

Mountain time—Canadian Northern (West of Kamsack).

Kipling, Saskatchewan.

Central time—Canadian Northern (East of Kipling).

Mountain time—Canadian Northern (West of Kipling).

Long Pine, Neb.

(Central time is used locally.)

Central time—Chicago & North Western (East of Long Pine).

Mountain time—Chicago & North Western (West of Long Pine).

Mandan, N.D.

(Mountain time is used locally.)

Central time—North. Pacific (East of Mandan).

Mountain time—North. Pacific (West of Mandan).

McCook, Neb.

(Central time is used locally.)

Central time—Chicago, Burlington & Quincy. Lines west of the Missouri River (East of McCook).

Mountain time—Chicago, Burlington & Quincy. Lines west of the Missouri River (West of McCook).

Melville, Saskatchewan.

Central time—Grand Trunk Pacific (East of Melville).

Mountain time—Grand Trunk Pacific (West of Melville).

Mobridge, S.D.

Central time—Chicago, Milwaukee & St. Paul.
Mountain time—Chicago, Milwaukee & Puget Sound.

Neudorf, Saskatchewan.

Central time—Canadian Pacific (East of Neudorf).
Mountain time—Canadian Pacific (West of Neudorf).

North Platte, Neb.

(Central time is used locally.)

Central time—Union Pac. (East of North Platte).
Mountain time—Union Pac. (West of North Platte).

Pierre, S.D.

(Central time is used locally.)

Central time—Chicago & North Western (East of Pierre).
Mountain time—Pierre, Rapid City & North Western
 (West of Pierre).

Portal, N.D.

(Central time is used locally.)

Central time—Minn., St. Paul & Sault Ste. Marie.
Mountain time—Canadian Pacific.

Phillipsburg, Kan.

(Central time is used locally.)

Central time—Chicago, Rock Island & Pacific (East of
 Phillipsburg).
Mountain time—Chicago, Rock Island & Pacific (West
 of Phillipsburg).

Plainville, Kan.

Central time—Union Pacific, Oakley Branch (East of
 Plainville).
Mountain time—Union Pacific, Oakley Branch (West of
 Plainville).

TRAIN RULE**Rio Grande, Tex.**

(Three miles west of El Paso, Tex., which also .

Central time—Galveston, Harrisburg & San Anton

Pacific time—Southern Pacific.

Sixela, Tex.

Central time—Fort Worth & Denver City.

Mountain time—Colorado & Southern.

Sterling, Colo.

(Central time is used locally.)

Central time—Chicago, Burlington & Quincy. Li
of the Missouri River (East of Sterling).

Mountain time—Chicago, Burlington & Quincy
West of the Missouri River (West of Ster

Tucumcari, N.M.

Central time—Chicago, Rock Island & El Paso R

Mountain time—El Paso & Southwestern Ry.

Williston, N.D.

(Central time is used locally.)

Central time—Great Northern (East of Williston)

Mountain time—Great Northern (West of Willistc

Between Mountain and Pacific Sectio**Avery, Idaho.**

Mountain time—Chicago, Milwaukee & Puget
(East of Avery).

Pacific time—Chicago, Milwaukee & Puget Soun
of Avery).

Caliente, Nev.

Mountain time—San Pedro. Los Angeles & S
(East of Caliente).

Pacific time—San Pedro. Los Angeles & Salt Lal
of Caliente).

Deming, N.M.

(Mountain time is used locally.)

Mountain time—Atchison, Topeka & Santa Fé.

El Paso & Southwestern.

Pacific time—Southern Pacific.

Field, B.C.

(Pacific time is used locally.)

Mountain time—Can. Pacific (East of Field).

Pacific time—Can. Pacific (West of Field).

Huntington, Ore.

(Pacific time is used locally.)

Mountain time—Oregon Short Line.

Pacific Time—Oregon R.R. & Navigation Co.

Mound House, Nev.

Mountain time—Southern Pacific.

Pacific time—Virginia & Truckee.

Paradise, Mont.

(Pacific time is used locally.)

Mountain time—Northern Pacific (East of Paradise).

Pacific time—Northern Pacific (West of Paradise).

Phoenix, Ariz.

*(Time used locally is 30 minutes faster than Pacific time,
and 30 minutes slower than Mountain time.)*

Mountain time—S.F.P. & P. (North of Phoenix).

Pacific time—Mar. & Phoenix (South of Phoenix).

Rio Grande, Tex.

(Three miles west of El Paso, Tex.)

Central time—Galveston, Harrisburg & San Antonio.

Pacific time—Southern Pacific.

TRAIN RULE**Seligman, Ariz.**

(Mountain time is used locally.)

Mountain time—Santa Fé Route (East of Seligman).

Pacific time—Santa Fé Route (West of Seligman).

Sparks, Nev.

(Mountain time is used locally.)

Mountain time—Southern Pacific (East of Sparks).

Pacific time—Southern Pacific (West of Sparks).

Tonopah Junction, Nev.

Mountain time—Southern Pacific.

Pacific time—Tonopah & Goldfield.

Troy, Mont.

(Mountain time is used locally.)

Mountain time—Great Northern (East of Troy).

Pacific time—Great Northern (West of Troy).

**Between Atlantic or Intercolonial and Eastern
Sections****Campbellton, N.B.**

(Atlantic time is used locally.)

Atlantic time—Intercolonial Ry. (East of Campbellton).

Eastern time—Intercolonial Ry. (West of Campbellton).

Vanceboro, Me.

(Eastern time is used locally.)

Atlantic time—Canadian Pacific Ry. (East of Vanceboro).

Eastern time—Canadian Pacific Ry. (West of Vanceboro).

Maine Central Ry.

Between Eastern and Central Sections**Asheville, N.C.**

(Eastern time is used locally.)

Eastern time—Southern (except Asheville and Morristown Line).

Central time—Southern (Asheville and Morristown Line).

Athens, Ga.

(The city uses Eastern time.)

Eastern time—Southern.

Seaboard Air Line.

Central time—Georgia.

Central of Georgia.

Atlanta, Ga.

(The city uses Central time.)

Eastern time—Seaboard Air Line (East of Atlanta).

Southern, Main Line (East of Atlanta).

Central time—Atlanta & West Point.

Central of Georgia.

Georgia.

Seaboard Air Line (West of Atlanta).

Southern (West and South of Atlanta).

Western & Atlantic.

Augusta, Ga.

(The city uses Eastern time.)

Eastern time—Atlantic Coast Line.

Charleston & Western Carolina.

Southern.

Central time—Central of Georgia.

Georgia.

TRAIN RULE

Benwood, W. Va.*(Eastern time is used locally.)**Eastern time*—Baltimore & Ohio (East of Benwood).*Central time*—Baltimore & Ohio (West of Benwood).**Bristol, Tenn.***(Eastern time is used locally.)**Eastern time*—Norfolk & Western.

Virginia & South-western.

Central time—Southern.**Buffalo, N.Y.***(The city uses Eastern time.)**Eastern time*—Buffalo, Rochester & Pittsburg.

Delaware, Lackawanna & Western.

Erie.

Grand Trunk.

Lehigh Valley.

Michigan Central.

New York Central & Hudson River.

Pennsylvania.

Wabash.

West Shore.

Central time—Lake Shore & Michigan Southern.

New York, Chicago & St. Louis.

Central Junction, Ga.*(Eight miles north of Savannah, Ga.)**Eastern time*—Atlantic Coast Line (North of Junction).*Central time*—Atlantic Coast Line (South of Junction).**Columbia, S.C.***(Eastern time is used locally.)**Eastern time*—Atlantic Coast Line.

Columbia, Newberry & Laurens.

Seaboard Air Line (North of Columbia).

Southern.

Central time—Seaboard Air Line (South of Columbia).

Corry, Pa.

(Eastern time is used locally.)

Eastern time—Pennsylvania.

Central time—Erie.

Detroit, Mich.

(Central time is used locally.)

Eastern time—Canadian Pacific.

Grand Trunk (in Canada).

Michigan Central (East of Detroit).

Pere Marquette (in Canada).

Wabash (in Canada).

Central time—Grand Trunk (in Michigan).

Lake Shore & Michigan Southern.

Michigan Central (West of Detroit).

Pere Marquette (in Michigan).

Wabash (in Michigan).

Dunkirk, N.Y.

(The city uses Eastern time.)

Eastern time—Erie.

Pennsylvania.

Central time—Dunkirk, Alleghany Val. & Pitts.

Lake Shore & Michigan Southern.

New York, Chicago & St. Louis.

Erie, Pa.

(The city uses Eastern time.)

Eastern time—Pennsylvania (P. & E. Div.)

Bessemer & Lake Erie.

Central time—Pennsylvania Co.

Lake Shore & Michigan Southern.

New York, Chicago & St. Louis.

Fort William, Ont.

(Central time is used locally.)

Eastern time—Canadian Pacific (East of Fort William).

Central time—Canadian Pacific (West of Fort William).

Grand Trunk Pacific.

TRAIN RULE**Franklin, Pa.**

(Eastern time is used locally.)

Eastern time—Pennsylvania.

Central time—Erie.

Lake Shore & Michigan Southern.

Gainesville, Ga.

(The city uses mean local time.)

Eastern time—Southern.

Central time—Georgia.

Holloway, O.

Eastern time—Cleveland, Lorain & Wheeling (East of Holloway).

Central time—Cleveland, Lorain & Wheeling (West of Holloway).

Huntington, W. Va.

(Eastern time is used locally.)

Eastern time—Baltimore & Ohio.

Chesapeake & Ohio (East of Huntington).

Central time—Chesapeake & Ohio (West of Huntington).

Jamestown, N.Y.

(Eastern time is used locally.)

Eastern time—Erie (B. & S. W. Div.).

Jamestown & Chautauqua.

Central time—Erie (Main Line).

Kenova, W. Va.

(Central time is used locally.)

Eastern time—Baltimore & Ohio.

Central time—Chesapeake & Ohio.

Norfolk & Western.

New Castle Junction, Pa.

Eastern time—Baltimore & Ohio (East of New Castle Junction).

Central time—Baltimore & Ohio (West of New Castle Junction).

Norton, Va.

Eastern time—Norfolk & Western.

Central time—Louisville & Nashville.

Oil City, Pa.

(Eastern time is used locally.)

Eastern time—Pennsylvania.

Central time—Erie.

Lake Shore & Michigan Southern.

Parkersburg, W. Va.

(The city uses Eastern time.)

Eastern time—Baltimore & Ohio.

Central time—Baltimore & Ohio Southwestern.

Pittsburg, Pa.

(The city uses Eastern time.)

Eastern time—Baltimore & Ohio.

Buffalo, Rochester & Pittsburgh.

Pennsylvania.

Pittsburgh Rys.

Central time—Pennsylvania Co.

Pittsburgh & Lake Erie.

Pittsburgh, Cincinnati, Chicago & St. Louis.

Wabash Pittsburg Terminal.

Port Huron, Mich.

(The city uses Central time.)

Eastern time—Grand Trunk (in Canada).

Pere Marquette (in Canada).

Central time—Grand Trunk (in Michigan).

Pere Marquette (in Michigan).

Salamanca, N. Y.

(Eastern time is used locally.)

Eastern time—Buffalo, Rochester & Pittsburgh.

Erie (East of Salamanca).

Pennsylvania.

Central time—Erie (West of Salamanca).

Sarnia, Ont.

(See Port Huron.)

(The city uses Eastern time.)

Sault Ste. Marie, Mich.

(Central time is used locally.)

Central time—Duluth, South Shore & Atlantic.

Minneapolis, St. Paul & Sault Ste. Marie.

Sault Ste. Marie, Ont.

(Eastern time is used locally.)

Eastern time—Algoma Central & Hudson Bay.

Canadian Pacific.

Titusville, Pa.

(Eastern time is used locally.)

Eastern time—Pennsylvania.

Central time—Dunkirk, Alleghany Valley & Pitt
R.R.

Union City, Pa.

(Eastern time is used locally.)

Eastern time—Pennsylvania.

Central time—Erie.

Walkerville, Ont.

(See Detroit.)

Washington (Washington Co.), Pa.

(The city uses Eastern time.)

Eastern time—Baltimore & Ohio.

Central time—Pennsylvania Co.

Pittsburgh, Cincinnati, Chicago & St. Louis.

Waynesburg & Washington.

Westfield, N. Y.

Eastern time—Jamestown, Chautauqua & Lake Erie.

Central time—Lake Shore & Michigan Southern.

New York, Chicago & St. Louis.

Wheeling, W. Va.

(The city uses Eastern time.)

Eastern time—Baltimore & Ohio.

Cleveland Lorain & Wheeling.

Central time—Pittsburgh, Cincinnati, Chicago & St. Louis.

Wheeling & Lake Erie.

Williamson, W. Va.

(Central time is used locally.)

Eastern time—Norfolk & Western (East of Williamson).

Central time—Norfolk & Western (West of Williamson).

Windsor, Ont.

(See Detroit.)

Personal Admonition

In the government of all bodies of men certain rules of conduct are of great importance. Standard Code rules under the head of "General Rules" set forth the duties of employees with respect to their personal conduct. There are

eleven rules upon this subject all of which are of importance. The first three rules require that employees must study the rules and pass the required examinations. The next three rules refer to the strict observance of all rules and regulations, and the remaining five rules prohibit the use of intoxicants and tobacco and emphasize the importance of being orderly and neat in appearance.

In all lines of business an employee can look for promotion only when he gives faithful and intelligent service, and performs all duties courteously, which in itself is an indication of capacity for greater responsibility. I wish to call special attention to personal conduct for its contributing value to the general result cannot well be over-estimated. Employees should be on the alert at all times, not only to secure safety of train operation, but because of the personal knowledge which can be gained by close observation and application, for efficiency depends largely upon the amount of interest which is taken in the work at hand. Try to be patient, accurate, courteous, and self-reliant. By self-reliant I do not mean "self-important." Self-reliance comes of a knowledge of the why and

wherefore of the subject at hand and it is one of the objects of this book to assist employees in a thorough and systematic mastery of the rules so that their self-reliance may be sufficient for the business at hand.

The responsibilities of train service are so great that examinations are necessary in order to make sure that the rules are understood, because the safety of the train and its load depends on each employee having a clear and definite idea of his duties.

In order that the public may distinguish employees with whom they may have dealings, certain employees are required to wear a prescribed badge and uniform. And, finally, remember the Golden Rule, and do unto others as you would that others would do unto you.

Definitions

Engine.—When the word, “engine” is used in the rules it refers to a locomotive propelled by any form of energy. Thus a gasoline motor or an electric motor is considered an “engine” under the rules.

Train.—The definition of a “train” is of great importance and it will be well for the student to become thoroughly familiar with the interpretation of the term. When the term is used in the rules it always implies an engine, or more than one engine coupled, with or without cars, displaying markers. If no markers are displayed it cannot be considered a train, but simply equipment; thus, if an order is given to meet No. 5 at D and No. 5 arrives without its markers the opposing train cannot proceed because it has not met train No. 5 as no markers were displayed.

Regular Train.—A “Regular Train” is a train which is represented on the time-table. That is, it has a schedule printed on the time-table. It may be that this schedule is only in effect for one day a week, or it may run daily; it makes no difference, it is a regular train if it has a schedule on the time-table regardless of the number of days it is in effect during the week. A train which runs over the road extra is not a regular train even though it may run every day in the week.

A “*Section*” is a train which is using a time

table schedule when there has been, or is to be, another train using the same schedule. When it is desired to run more than one train on a schedule all trains using that schedule, except the last, display green signals. In such cases each train using the schedule is called a section, each section being numbered in regular order, for example, the first train using schedule No. 1 is called 1st No. 1, the second train using the schedule is called 2nd No. 1, and so on.

An "*Extra Train*" is a train which has no timetable schedule. Extra trains are distinguished from regular trains by the white signals which they display on the front of the engine. There are two kinds of extra trains; work extra, and extra. The term "work extra" is used exclusively to designate a work train, and the term "extra" is used to designate any other extra train. Extra trains are known and designated in train orders by the number of the engine. For example, if engine 345 is running extra, it is known as extra 345. In case two engines are used on an extra train the number of the leading engine is generally used to designate the ex-

tra by, although some roads require that both engine numbers be used in all orders.

A "*Superior Train*" is one having preference or precedence over another train. The term is generally used as between two trains, that is, No. 2 being a train of superior direction is superior to No. 1, but both trains are first-class trains; No. 24 is superior to No. 25 as it is a train of superior direction, both trains are second-class, therefore No. 24 would be called a "Superior Train" in connection with train No. 25, but in connection with train No. 1 it would be an inferior train, because it is a train of inferior class. There are three methods of giving a train preference: (1) By "right," which is conferred by train order; (2) by "class," which is conferred by time-table, and this superiority lasts until a schedule becomes twelve hours late, or until the schedule is annulled, or until the precedence of the schedule has been restricted by train order; and (3) by "direction," which is conferred by time-table and affects trains of the same class only, in relation to each other.

"*Right*" is superior to class or direction. Whenever a train order is issued which gives

No. 1 right over No. 2 it supersedes the superiority by direction which the time-table conferred upon No. 2, making No. 1 a train of superior right. When a meeting point is made between No. 1 and No. 2, No. 1 becomes superior to No. 2, to the meeting point. If No. 2 is directed to run one hour late and No. 1 is given the time, then No. 1 becomes superior to No. 2 until No. 2 is an hour late.

"Class" is conferred by time-table: the first class is superior to the second class, and the second class is superior to the third class, and so on. Thus, No. 1 is superior to No. 24 because No. 1 is a first-class train and No. 24 is a second-class train.

"Direction" is conferred by time-table: On single track each time-table contains a foot-note which states that trains in a certain direction are superior to trains in the opposite direction, and a train moving in the direction in which trains are superior, as stated by the foot-note, are superior to trains of the same class in the opposite direction. Superiority of direction applies only between trains of the same class.

"Time-Table."—The Standard Code states

that a Time-Table is the authority for the movement of regular trains subject to the rules. It contains the classified schedules of trains with special instructions relating thereto. By special instructions is meant information as to register books, bulletin boards, speed restrictions, provisional stops, the use of special tracks, etc.

A "*Schedule*" is that part of a time-table which prescribes class, direction, number, and movement for a regular train. The class indicates the superiority of a train, using such schedule with respect to other schedules. Direction shows the right of a train, using the schedule with respect to other trains of the same class. The number is the means by which trains are identified. The movement refers to the time at the different stations, which shows when a train using the schedule may arrive and depart. Each schedule has signs opposite the time given at certain stations, which indicate whether the train is to stop regularly at that station simply make a flag stop. If no sign appears the train is not expected to stop at all.

A "*Division*" is that portion of a railway assigned to the supervision of a Superintendent

A "*Sub-Division*" is that portion of a division so designated on the time-table.

A "*Main Track*" is a track extending through yards and between stations, upon which trains are operated by time-table or train orders, or the use of which is controlled by block signals. The use of a main track is governed by the rules and the time-table.

A "*Station*" is a place designated on the time-table by name, at which a train may stop for traffic or to enter or leave the main track or from which fixed signals are operated. Unless the name of a point appears on the time-table it is not considered a station under the rules.

A "*Siding*" is a track in addition to the main track, used for meeting or passing trains. It is limited to the distance between two adjoining telegraph stations. We are in the habit of referring to commercial tracks, which are used for loading and unloading, as sidings, but such tracks are not meant by the rules, when the word, "siding" is used.

A "*Fixed Signal*" is a signal of fixed location, indicating a condition affecting a movement of a train. There are a great many fixed signals

in use upon a railroad. Such signals as slow boards, stop boards, yard limits, switch signals, train order signals, block signals, interlocking signals, semaphores, disc, ball or other means of indicating "stop," "caution," or "proceed" are fixed signals in Standard Rules. Whistle posts and public crossing posts are not considered fixed signals.

A "*Yard*" is a system of tracks within defined limits for the making up of trains, storing of cars, and other purposes over which movements not authorized by timetable or by train orders may be made, subject to prescribed signals and regulations. Yard limits are usually designated by boards, which are placed alongside the track at the entrance to the yard, so that approaching trains may know when they are within such limits. The rules provide for the use of the main track within yard limits with certain restrictions, which are hereafter mentioned.

A "*Yard Engine*" is an engine assigned to yard service and working within yard limits. It will be seen that when a regular yard engine is outside of its yard limits it is not a yard en-

gine under the rules and cannot enjoy the privileges conferred upon a yard engine.

A "*Pilot*" is a person assigned to a train, when the Engineman or Conductor or both are not fully acquainted with the physical characteristics or running rules of the road or portion of the road over which the train is to be moved.

The foregoing definitions are very important and I wish to impress upon the student that it is necessary to become familiar with the meaning of the terms, as defined.

Rules for Single Track

All Railways use Standard Time. This time is obtained, once during every twenty-four hours, from some reliable observatory. Conductors, Enginemen, and such other class of employees as may be designated are required to have watches that have been examined and certified to by designated inspector.

Watches of Conductors and Enginemen must be compared before starting on each trip with a clock, which is designated as a Standard Clock. The time, when watches are com-

pared, must be registered. When Conductors and Enginemen report for duty at a point where no standard clock is located, they should obtain standard time from the Train Dispatcher or from some Conductor or Engineman who has reported and received standard time.

All of the clocks used by the Company are not standard clocks. Those which are standard are so designated by a label.

Time-Tables

Rule four governs the taking effect of a new time-table. Upon the face of each new time-table is printed the date and hour at which it will take effect. From the moment it takes effect it supersedes the preceding time-table and all trains, which have been moving on the preceding time-table must be governed by the new time-table. If a schedule of the new time-table corresponds as to number, class day of leaving, direction, and initial and terminal stations with a schedule of the old time-table, a train moving under such schedule will retain its train orders and assume the schedule of

corresponding number on the new time-table. But if schedules do not so correspond the train moving under the schedule of the old time-table cannot proceed without orders to do so.

The time and the day on which a new time-table takes effect is generally so arranged that the change of time will make as little trouble in movement of trains as possible.

Enginemen and Conductors are required to sign a receipt for the new time-table and unless such receipt is filed in the Train Dispatcher's office, it should be sent by wire before starting out on the first trip that may come on the time of the new time-table. This is necessary in order that the Train Dispatcher who is in charge of train movement may be assured that Enginemen have the new time-table in their possession and will be governed by same.

Extra trains which are moving over the road when time-tables change are not affected thereby, with the exception that should an extra train hold orders to meet some regular train, which lost its rights by reason of change of time-table, such orders may be disregarded.

The date of a schedule is determined by the

time at which such schedule is due to leave its initial station on such division or subdivision. Any train using such schedule assumes the same date as the schedule. Rule four states that not more than one schedule of the same number and day shall be in effect on any division. By this is meant that not more than one schedule of the same number and day shall be in effect on any portion of a division, that is, No. 1 of the old time-table may proceed to "C" on the schedule shown on the old time-table and may proceed from "C" to "Z" on the schedule of the new time-table. In this movement it is necessary for train No. 1 to use both the schedule of the old and of the new time-table, of the same number and day, but it does not use both schedules over the same portion of the road.

In case the time on the new time-table is made earlier than the time on the old, but not so much earlier as to put the schedule into a different day, a train using the old schedule may proceed on the new, providing there are no other changes in the schedule. If a schedule is made later on the new time-table than on the old a train running on the old schedule may pro

ceed on the new, providing that the new schedule has not been made so much later as to put it in another day and also providing that there have been no other changes made in the schedule. In this case, however, the train would have to wait until the schedule of the new time-table was due at such station.

In case schedule No. 1 of the old time-table was due to leave its initial station at 11 P.M. on Saturday and a new time-table took effect at 12:01 A.M. Sunday, showing No. 1 due to leave its initial station at 1 A.M., the train on the road could not assume schedule No. 1 of the new time-table for the reason that schedule No. 1, which corresponds in day of leaving with the day of leaving of train No. 1, would be more than twelve hours over-due and, therefore, of no effect. In such case, the train authorized by the old time-table cannot proceed without orders, but train No. 1 of the new time-table may run on time, because it is due to leave its initial station after the time-table takes effect.

When a new time-table takes effect, there are but two ways in which a schedule is effective. It must become due at its initial station after

the time-table takes effect; or a train must be on the road, which was authorized by the old time-table and which corresponds as required and can assume the schedule of the new time-table and continue its trip to the terminal. Supposing the old time-table shows schedule No. 1 from A to F, due to leave A at 1 A.M. and arrive at F at 3 A.M. and new time-table takes effect at 4 P.M., showing No. 1 due to leave A at 5 P.M. and due to arrive at F at 7 P.M. In such a case it would be impossible for No. 1 of the new time-table to run for the reason that the schedule of the old time-table for that day would either have been fulfilled or would have become twelve hours late before the new time-table took effect. In no case must a train on the road at the time new time-table takes effect assume a schedule of corresponding number, unless such schedule corresponds as to class, day of leaving, direction, and initial, and terminal stations.

Making Time-Tables

In the make-up of time-tables not more than two times are given for a train at any point

where one is given, it is, unless otherwise indicated, the leaving time; when two times are given, they are the arriving and leaving time. A train must not arrive at a station ahead of its arriving time, when shown, and it must not leave a station ahead of its leaving time.

Unless otherwise indicated, the time shown applies to the switch where an inferior train enters the siding; if there is no siding, it applies to the place from which fixed signals are operated; where there is neither siding or fixed signals, it applies to the place where traffic is received or discharged.

Where one train is to pass another or meet an opposing train attention is called to it by figures in full-faced type; that is, the time of each schedule concerned is in heavy type at such station. In case trains are to be met or passed at a siding, which extends between two adjoining stations, the time at each end of the siding will be shown in full-faced type. In case there are one or more trains to meet or pass a train between two times or more than one train to meet a train at any station, attention is called to it by a special sign. These signs vary

on different roads. In case it is desired to have a train make regular stops at a certain station the letter "S" is shown before the schedule time at such station. If it is desired that the stop shall be made only when passengers are at that station waiting to go, or to let passengers off such train, then the letter "F" precedes the time at that station and indicates that the train will stop, if flagged. The paragraph sign placed in front of the time at a station indicates that it is a place at which the train stops for meals. "L" indicates leave and "A" arrive.

A time-table is the authority for the movement of regular trains subject to the rules. It contains the classified schedules of trains with special instructions relating thereto. Time-tables are usually numbered consecutively in the order in which they are issued. A schedule is the most important information which is contained in a time-table as it prescribes the class, direction, number, and time for the movement of a regular train. It is very important that the student should thoroughly understand the difference between a schedule and a train. The schedule is the column on the time-table which indicates the

time, class, and days of the week on which a regular train shall run; but a train is the equipment which actually moves over the road on the authority of the schedule. That is, a train is an engine or more than one engine, coupled, with or without cars, displaying markers. In order that important trains may not be required to get orders against other trains of less importance the schedules on a time-table are divided into what is termed classes. That is, a certain number of schedules are designated as first class; these schedules are usually the ones which are to be used by high-class passenger trains. Another certain number of schedules are designated as second class and are generally used for local or less important passenger trains. The third class is generally used for important freight trains and the fourth class for other freight trains. In making up time-tables some roads put the words "Daily" or "Daily Except Sunday," or whatever days a schedule is to be effective, both at the head and foot of the schedule column. In my opinion such information should only be shown at the head or initial station end of the schedule because

its appearance at the other end of the column is liable to be misleading in case a schedule is due out of its initial station on one day and into its terminal on the following day. For example, No. 25 is due out of its initial station at 7 P.M. and due into its terminal at 7 A.M. The schedule is marked "Daily Except Sunday" at both ends of the column; if an inferior train in the opposite direction reports from No. 25's terminal station, on Sunday morning, there is some danger that the crew might be misled into thinking that No. 25 would not arrive on Sunday, and, therefore, proceed against it.

Signal Rules

Each employee whose duty may require him to give signals must supply himself with proper appliances and keep them in good order ready for immediate use. This does not mean that the employee must purchase these signals himself but that he must see to it that he is supplied with signals and that they are in good condition for use. In the daytime flags of the prescribed colors must be used and at night lamps of the

prescribed colors are to be used. All night signals are to be displayed from sunset to sunrise and whenever weather or other conditions obscure day signals. In giving signals care should be taken that the signal is given in such a manner that it will not be taken by a train other than the one intended for.

Visible Signals

The Standard Code provides that red shall be used for stop and danger and that green and white shall be used when it is necessary to stop a train at a station to take on passengers or freight. A blue signal is to be used by car inspectors or other workmen, who may be working under or about the cars. The signal which shall be used for proceed is not prescribed, neither is the signal for caution. This leaves roads free to choose such colors for these indications as may seem best. Some roads use white for proceed and green for caution; others find it to their advantage to use other colors for these purposes, discarding the use of the white signal as a safety signal. The chief objection

to the use of white for safety lies in the fact that should a colored lense be broken it will show white and indicate safety when as a matter of fact, it may have been intended for a danger signal, but from my experience in this respect I think that the danger is more theoretical than practical. Fusees are used as a means of protecting trains and when one is burning red, it must not be passed until it has burned out; when burning green, it is a caution signal and may be passed, but the train must proceed with caution.

Rule twelve provides for six different indications to be given by hand, flag, or lamp. They are as follows: Swung across the track indicates stop; raised and lowered vertically, proceed; swung vertically in a circle at half-arm's length across track, when train is standing, back; swung vertically in a circle at arm's length across the track, when train is running, the indication is train parted; swung horizontally above the head, when the train is standing, "apply air brakes"; held at arm's length above the head, when the train is standing, "release air brakes."

Care should be taken to give these signals

exactly as indicated by the illustrations in another part of this book.

Torpedoes are used for signaling trains under certain conditions. This is done by placing one or two of the torpedoes on the rail on the engine-man's side. When two are used, they are to be placed not more than 200 feet apart and their explosion is a signal to reduce speed and look out for a stop signal. The explosion of one torpedo is a signal to stop.

Any object waved violently on or near the track is a signal to stop.

Audible Signals

An audible signal is a sort of wireless method of transmitting information concerning train movement. Sounds of three different lengths of duration are used to indicate certain things. These sounds used separately and in combinations are made to give twelve messages to those concerned.

In giving audible signals great care should be taken to have the sound of the whistle distinct, with intensity and duration in proportion to the

distance the signal is transmitted. Care must be taken that the blasts are uniform in length and that the space interval between the blasts is uniform, otherwise the signals are liable to be misunderstood. One short blast of the whistle indicates stop and it is a signal to apply brakes. Two long blasts of the whistle is a signal to release brakes, and also indicates that the train is about to start. One long and three short blasts is a signal for the flagman to go back and protect the rear end of the train. Four long blasts is a signal given to call in the flagman from the west or south. Five long blasts are given to call in the flagman from the east or north. Three long signals given when the train is running indicates that the train has parted; this is to be repeated until answered by the hand signal 12(d), which is the hand, flag, or lamp swung vertically in a circle at arm's length across the track; three long blasts are also used to answer signal 12(d). Two short blasts of the whistle is a signal given to acknowledge any signal which is not otherwise provided for. Three short blasts when the train is standing is a signal for the train to back; it is also an answer to the han

signal or communicating signal to back; when the train is running it is an answer to the signal to stop at the next station. Four short blasts are given as a call for signals from switchmen, and interlocker operators. One long and two short blasts of the whistle are given by a train which is displaying signals for a following section to call the attention of yard engines, extra trains, or trains of the same or inferior class or inferior right to the signals displayed for a following section. Two long and two short blasts are given when approaching road and street crossings at grade, as a warning to the public. One very long blast of the whistle is given when approaching stations, junctions, and railroad crossings at grade. A succession of short sounds of the whistle is an alarm for persons or cattle on the track.

Torpedoes are audible signals. When they are used they are to be placed on the rail on the engineman's side. The explosion of one torpedo is a signal to stop; the explosion of two torpedoes not more than two hundred feet apart is a signal to reduce speed and look out for a stop signal.

Rule ninety-nine includes torpedoes as a means of protection, but under this rule the flagman is directed to use the torpedoes when he is recalled, if the conditions require it. The rule fails to state what the conditions are which would require the use of the torpedoes. My understanding of the conditions which would require the placing of two torpedoes on the rail when a flagman is recalled is as follows: When a superior train is overdue; when the train which is being protected is in such a position that it cannot be easily seen by an approaching train; when the flagman is a long distance back from his train with a down grade in the direction of the train which is being protected; or in stormy or foggy weather.

Communicating Signals

Any device which enables the train crew to communicate with the engine crew is termed a communicating signal. The common apparatus for such signalling, at the present time, is an air signal device so arranged that trainmen can, from any car in the train, cause an air whist!

to sound in the engine cab. A certain number of sounds when running mean a certain thing, but when standing the same number of sounds has a different meaning. One whistle signal is not used because the train parting or the air whistle hose parting between cars would cause one sound of the air-signal whistle. The air-signal whistle, as a general thing, is only used on passenger trains.

Two sounds when standing indicates, start; when running two sounds indicates, stop. Three sounds when standing, back; when running, stop at the next station. Four sounds when standing is a call to apply or release air brakes; when running it is a signal to reduce speed. Five sounds when the train is standing is a signal to call in the flagman; when running it is a call to increase speed.

Train Signals

It is required by rule that the headlight must be displayed to the front of every train by night. When a train turns out to meet another and has stopped clear of the main track, or when a

train is standing at a junction point or at the end of double track to meet an opposing train, the headlight must be concealed. This applies to all trains, freight and passenger alike. When the headlight is not concealed it is a warning to an approaching train that the train is not clear of the main track, but the fact that the headlight is concealed must not be accepted as a signal that the train is clear. The reason for concealing the headlight, under the circumstances mentioned, is so that an approaching train can see the switch and station signals and note whether or not they are in proper position to permit the train to proceed. But should a train be entering a siding where cars might conceal the headlight from the approaching train, the flagman should immediately flag the approaching train until his train is clear so that the approaching train having seen the headlight become concealed, will not take the fact as indicating a clear track. When two or more trains are taking the siding for an approaching train the headlight of the leading train should not be concealed until all trains are clear; if the siding is too short to permit all trains to clear, the hea

lights should all remain open, for a train cannot be considered clear of the main track as long as either switch is left open; under such circumstances the approaching train must slow down and proceed only as the way is known to be clear and the signals right. When a headlight is disabled the fact should be reported to the superintendent who should take steps to notify opposing trains.

The above explanation must not be taken as giving the superior train the right to consider an inferior train, which it holds orders to meet, is clear of the main track simply because the inferior train has screened its headlight, for the rules plainly state that under train orders trains will meet as prescribed by the rules. That is, the superior train must stop at the switch where the inferior train would enter the siding in case the inferior train is not there. The concealing of the headlight is to prevent blinding the sight of the engineman of the approaching train so that the switch signals and other signals cannot be easily seen, and is not intended to indicate a clear track for the superior, or approaching train.

Yard engines must display a headlight to the front and to the rear at night. If the yard engine is not provided with a headlight to the rear two white lights must be used. Yard engines do not display markers.

Markers

The following signals will be displayed, one on each side of the rear of every train, as markers, to indicate the rear end of the train: By day, green flags; by night, green lights to the front and side, and red lights to the rear; except when the train is clear of the main track, when green lights must be displayed to the front, side, and rear. The markers are very important signals and must be kept in good condition. At night the red light to the rear is a warning to following trains that there is a train ahead so that they may keep a sufficient distance in the rear to avoid collision with it. The green light to the front is for the purpose of permitting the crew on the head end to know that the train is all together. The green lights to the side are for the information of passing trains and also switch-

men and stationmen. When the train is clear of the main track the green lense of the markers shows to the front, side, and rear and the red lense is toward the last car of the train so that it cannot be seen. Markers for night use usually consist of a blizzard light with three green lenses and one red lense in all standing, at right angles with each other. In meeting trains it is of great importance that trainmen look for the markers and if not seen it indicates that the train has parted and it has not all arrived at the meeting-point; this condition makes it necessary for the opposing train to wait until the markers arrive.

Sections

By the order of the train dispatcher, any number of trains can be run on one schedule, but when more than one train is run on a schedule all of the trains, except the last, must display green signals in the place provided for that purpose on the front of the engine. For example, if four trains are run on schedule No. 4, the first, second, and third train will display

green flags by day and in addition green lights by night in the proper place on the front of the engine; but the fourth train will not display any signals on the engine. The four trains are known as sections of No. 4 and are designated as 1st No. 4, 2nd No. 4, 3rd No. 4, and 4th No. 4, and are required to maintain their regular order while moving over the road unless the regular order of movement is changed by train order.

Extra trains are trains which are not represented on the time-table. An extra train always displays two white signals on the front of the engine in the places provided for that purpose; this is done so that the train will not be confused with any of the regular trains; because of the liability of accident. In case two engines are used on a train the leading engine only shall display the signals. Extra trains are inferior to all regular trains and are governed with respect to opposing extra trains by the train order which they receive. On single track the extra moving in the superior time-table direction is permitted to hold the main track at a meeting point with an opposing extra train.

When two or more engines are coupled together the leading engine only will display white or green signals when required. The leading engine should operate the air and sound all the signals. In case of an extra train the leading engine gives its number to the extra. That is, if engine 234 and engine 235 were coupled to an extra train the extra would be known as extra 234, the leading engine.

Extra Trains

It will be noticed that train signals, except the headlight, are duplicated, that is, one signal on each side of the train. This is done so that the signals can be plainly seen from either side of the train so that there may be no difficulty in the signals being easily seen.

When cars are being pushed by an engine, except when shifting or making up trains in yards, a white light must be displayed on the front of the leading car at night. In the daytime a flagman should ride the leading car to signal the engineman in case of need.

Each car on a passenger train must be con-

nected with the engine by a communicating signal appliance so that the safety and comfort of the train and its load can be conserved.

For the protection of workmen a blue flag by day and a blue light by night displayed at one or both ends of a car or engine or train indicates that the car, engine, or train should not be moved. Workmen must display the blue signals and the same workmen alone are authorized to remove them. Other cars must not be placed on the same track so as to intercept the view of the blue signals, without first notifying the workmen who placed the signals.

Use of Signals

In order that imperfectly working signals may not cause accident, which they were intended to prevent, the rules governing the use of signals provide that the absence of a signal where one is usually displayed or a signal which is imperfectly displayed must be regarded as a stop signal. A stop signal is the most important indication which a signal can give because failure to obey it would be followed by the mo

serious results and it is for this reason that an imperfectly displayed signal or the absence of one where one is usually displayed must be interpreted as being a stop signal. Signals imperfectly displayed or the absence of a signal where one is usually shown must be reported to the superintendent.

At stations where a train is to make a regular stop the time on the schedule at that station is prefixed by the letter "s." There are, however, a number of stations at which it is not necessary that certain trains stop regularly as the business from that point is light. Whenever such a condition exists the station is made a flag stop for that train by prefixing the time at such station by the letter "f." This letter indicates that the train will stop to receive passengers or freight and in order that the train may know when there are passengers or freight to go it has been arranged that a green and white signal shall be displayed as a notice for that train to stop. The green and white signal will not stop any train at that station except the one which the schedule indicates is to stop on flag. Whenever a train is to be stopped at a station which is not


a flag station for such train a red signal must be used.

When any signal is given to stop a train (except a fixed signal) it must, unless otherwise provided for, be acknowledged by two short blasts of the steam whistle. A signal to stop at the next station or a signal to back the train must be acknowledged by three short blasts of the steam whistle.

The engine bell must be rung when an engine is about to move or when it is approaching a public road crossing at grade and in case of a public road crossing the bell must be kept ringing until the crossing is passed. The whistle must be sounded at all whistling posts. It must be understood that all unnecessary use of either bell or whistle is prohibited. This is necessary in order that the usefulness of the bell and whistle may be conserved.

Superiority of Trains

When a superior train is spoken of it is always in connection with some other train. That is to say, a train may be superior to one train



and still be inferior to another train. For example, a second-class train is superior to a third-class train but it is inferior to a first-class train. It is necessary that this point be thoroughly understood in order to fully understand the rules for the movement of trains. A train can be made superior to another in three ways; namely, by right, by class, or by direction. Right is conferred by train order; that is, any order which gives an inferior train the authority to move against a superior train makes that inferior train superior to the superior train up to the time limit of the order or to the designated point, and in the movement of the trains thereafter it is considered the superior train within certain limits covered by the order. Class is conferred by time-table; trains of the first class are superior to trains of the second class, and trains of the second class, are superior to trains of the third class, and so on. Direction is conferred by time-table and it applies between trains of the same class only. On single track each time-table states that trains in one certain direction are superior to trains of the same class in the opposite direction. Thus, a

first-class train, moving in the direction in which the time-table states one train is superior to another of the same class, becomes superior to a first-class train, moving in the opposite direction.

Extra trains are inferior to all regular trains, but when two extra trains meet the extra in the inferior direction must take the siding. Otherwise an extra train must be governed with respect to other extras by the orders which it holds.

Movement of Trains

Most railroads use a train register at all terminals and also at junction points so that trains may ascertain what trains have passed. At most register stations the conductor is required to personally register his train. This is done so that the information will be as accurate as possible, for the movement of trains depends upon the record. Unfortunately the Standard Code does not provide for the use of the train register although nearly every railroad uses it. The train register contains columns for keeping a record of the date, time, number of the train, engine number, conductor, and engineer, also

either or not signals were displayed and the or of same. At some points where the registering of a train, by the conductor, would cause extra stop, for important trains, it is arranged the operator or switch-tender to register such ins as do not stop regularly on the schedule. Unless otherwise directed work trains should register every time they arrive at or leave a register station. When work extras lay up overnight at a point which is not a register station, they should receive a train order stating what ins have gone so that they can arrange protection accordingly. The usual form for such an order is as follows: "All trains due at H before 6 p. m. have passed except No. 45 and No. 56."

In order to provide against complications the rules provide that train schedules, unless fulfilled, are in effect for twelve hours after their arrival at each station. When a train becomes twelve hours overdue at any station an inferior train may proceed against such train without need of orders to do so and any orders it may hold concerning such train become of no effect. Any train twelve hours behind its schedule arriving or leaving time at any station loses both right

and schedule and can thereafter proceed only as directed by train order. The words "twelve hours behind their schedule arriving time" refer to the arrival of the train and do not affect a train which has arrived at a station, say ten minutes before it is twelve hours late on its arriving time and is still at such station when it is more than twelve hours overdue on its arriving time, providing it is not more than twelve hours late on its leaving time. For example, No. 1 is due to arrive at B at 5 A.M. and leave at 6 A.M. In case No. 1 arrives at B at 4:55 P.M. and can leave B before 6 P.M. it does not lose right and schedule but if it fails to arrive before 5 P.M. it has lost right and schedule even though it can be ready to leave B before 6 P.M. But in such a case the dispatcher can direct it to run as No. 1 by giving it an order to do so; it being understood that No. 1 can leave B before 6 P.M. In other words when a regular train has lost its schedule by reason of being twelve hours behind its schedule time, it cannot again assume such schedule even though it may overtake it, unless it is directed by train order to do so.

A train must not leave its initial station

junction or pass from double track to single track until it has been ascertained whether all trains due, which are superior or of the same class, have arrived or left. This information is usually obtained from a train register.

A train must not start until the proper signal is given. This means not only the proper signal but also the proper signal given by the person in charge of the train.

When a train of one schedule finds itself on the time of a train of another schedule of the same class it may proceed upon its own schedule. Trains of the same class may pass each other without orders to do so and extra trains may pass other extra trains. But a train of inferior class may not pass a train of superior class without a train order to do so.

An inferior train which is running ahead of a superior train in the same direction must clear the time of such superior train not less than five minutes unless such superior train is a first-class train in which case the inferior train must be clear of the main track by the time the first-class train is due to leave the next station in the rear where time is shown.

An inferior train moving in the opposite direction must keep out of the way of a superior train and failing to clear the main track as the rules require it must protect as provided in Rule 99. An extra train must clear the time of regular trains in the opposite direction five minutes unless otherwise provided. An extra train need not protect against other extra trains in the opposite direction unless it receives orders with respect to them.

Meeting Points

At meeting points between trains of the same class the train in the inferior direction must clear the main track before the leaving time of the superior train. At meeting points between extra trains the train in the inferior time-table direction must take the siding unless otherwise provided. When a train takes siding to meet another it must pull in at the first entrance switch if possible. When it is necessary to back in the train must first be protected as prescribed by Rule 99 unless some other arrangement provided.

In backing in at the meeting point the flagman should be sent out and the superior train brought to a stop before the inferior train passes the switch at which it usually pulls in. If the order contains the provision that the train will back in at the meeting point, then it is not necessary that the flagman actually stop the other train before the train which is to back in passes the switch at which it usually enters, but he must go out a sufficient distance to secure protection.

When trains of different classes meet, the inferior train must take the siding and clear the superior train at least five minutes. The superior train must stop at schedule meeting stations when the train to be met is of the same class unless the switch is right and the track clear. When the expected train of the same class does not make the schedule meeting station the train in the superior direction must approach all sidings prepared to stop until the expected train is met. The superior train must stop clear of the switch used by the train to be met in going on the siding. This precaution is necessary between trains of the same class for the reason that the Standard Code does not provide a time interval for the

variation of watches; the above provision being all that is necessary to protect trains of the same class and the five minutes clearance required of inferior class-trains is sufficient to take care of any variations of watches which may reasonably occur.

Train Movement

When no form of block signal is used trains running in the same direction must keep at least five minutes apart except when closing up at stations to meet or pass another train.

Not more than two times are shown for a train at any station. When but one time is shown it is the leaving time unless otherwise indicated. A train must not be permitted to arrive at a station ahead of its schedule arriving time when an arriving time is shown. A train must not leave a station in advance of its schedule leaving time.

Yard Limits

Within yard limits the main track may be used protecting against certain trains. In case an extra train is given right over all trains it

does not give it right to proceed through the yard limits regardless of the rule, which requires that extra trains must move within yard limits prepared to stop unless the main track is seen or known to be clear. The Standard Code does not attempt to give in detail the manner in which protection within yard limits is to be secured, because conditions and practices vary on different roads. Railroads which are equipped with automatic block signals may wish to take advantage of them for protection within yard limits. Some roads operate under manual block protection; still other roads equip themselves with semaphores on each side of the yard, which are held at stop at all times, except when trains are allowed to enter the yard. The exact manner of securing protection is left for each road to determine for itself.

Disabled Train

When one train overtakes another train, which is so disabled that it cannot proceed, it may pass the disabled train if practicable, and if necessary, it will assume the schedule and take the train

orders of the disabled train. When this is done the train, which passes the disabled train, will proceed to the next open telegraph office and there report to the train dispatcher. The disabled train will assume the right or schedule and take the train orders of the last train with which it has exchanged and will when able proceed to and report from the next open telegraph station. When a disabled train is passed it is not necessary to exchange schedules and train orders, if the train, which is to pass has right or schedule to make the next telegraph station. When one extra train overtakes another extra train, which is disabled, it may pass under the same conditions as regular train.

Train Unable to Proceed

When a train unable to proceed against the right or schedule of an opposing train is overtaken between telegraph stations by an inferior train or a train of the same class, having right or schedule of its own, which permits it to proceed, the delayed train may, after consulting with the following train, precede it to the next tele-

graph station where it must report to the train dispatcher. If any opposing trains are met under these circumstances, it must be fully explained to them by the leading train that the other train is following. It is the author's opinion that this rule should not operate between sections of the same schedule in case the leading section is in any manner restricted by train orders. When this rule is used, trainmen must be sure that the overtaking train has full right or schedule of its own without pooling schedules or train orders with the leading train. If it has, it may take the leading train ahead of it to the next telegraph station. This rule contains grave possibilities for danger and trainmen must be very cautious in operating under its provisions.

Sections

In order that the train dispatcher may be in full control of all trains, which are started over the road, it is provided that a train must not display signals for a following section nor an extra train be run without orders from the train dispatcher. When signals, which are displayed

for a section, are taken down, the conductor will, if there is no other provision, arrange with the operator in writing to notify all opposing trains of the same or inferior class, leaving such point that the section for which signals were displayed has not arrived. If there is no operator, the conductor will arrange with the switch tender or in absence of both operator and switch-tender, the conductor must leave a flagman there for the purpose. When the following section arrives and reports, the operator, switch-tender, or flagman's duty is finished. The carrying of signals for a following section has the effect of giving the following section the superiority of both class and direction belonging to the leading section, so it is very essential to the safety of all trains that the above provision be strictly adhered to. The signals do not affect trains, which are superior by class and direction. When a train is running between the sections it does not affect the rights of any of the sections.

Rule for Flagging

When a train stops or is delayed under circumstances in which it may be overtaken t

another train, the flagman must immediately go back with stop signal a sufficient distance to insure full protection. It is the flagman's duty to go back far enough so that his stop signals will be seen in time by the engineer of the following train. The rule requires that he go back at once under all circumstances, as he cannot know just how close a following train may be. He must be supplied with the proper signals to meet the requirements of the weather conditions and he must use such signals in strict compliance with the rules. The matter of safe flagging is a very important one and no half-hearted service should be rendered. When the flagman is recalled he may return to his train, if he cannot see or hear a following train approaching, but if a train is approaching he must remain and stop it before returning to his own train. When no train is in sight and after he has been recalled he may place two torpedoes on the rail on the engineer's side not more than 200 feet apart, when the conditions require it, and then return to his train. Standard Rules do not require the use of torpedoes, except when the flagman is recalled or in stormy or foggy weather. When the track

is straight and the view is unobstructed, I see no reason why torpedoes should be used; neither is there any rule which requires their use, except in the interval when the flagman is returning to his train. The conditions which require the placing of two torpedoes on the rail are as follows: when a superior train is overdue; when the train which is being protected is in such a position that it may not be easily seen by an approaching train; when the flagman is a long distance back from his train, so that a train might arrive before he reached his train; or during stormy or foggy weather. The front end of the train must be protected in the same manner when necessary.

Train Parting

Should a train part while in motion the signals provided by rule must be given and care used to prevent damage to the detached portion. The detached portion must not under any circumstances be moved by any train which may be following, as the head end has full right to return to the detached portion regardless of all other trains.

When a train parts it becomes the duty of the flagman to notify all following trains that his train has parted and it is also his duty to see that the rules are obeyed and that no train passes the rear end and also that the rear end is not moved until the head end returns. The head portion has right over all trains to return for the rear portion and this is the reason why no train must be permitted to pass the rear end. The reason why the rear end should not be moved is that the head portion may know where the detached portion stands and should some following train shove the rear end ahead of it, the head portion of the returning train might collide with the rear portion. Should the head end run by a station or several stations it has the same right to return for the rear.

Pushing Cars

When cars are being pushed by an engine except when shifting or making up trains in yards, a flagman must take a prominent position on the front end of the leading car so that he can signal the engineman in case of need. This precaution is necessary to prevent the cars, which are

being moved from being shifted against other cars or obstructions on the track and also to protect any persons who may be crossing the track.

Make Reports in Writing

It is of great importance that messages or orders respecting the movement of trains or the condition of track or bridges must be in writing. By having these messages or orders in writing they are more apt to be fully understood and then in case of error the responsibility can be more easily fixed.

Switches

Conductors are responsible for the position of switches used by them and by their trainmen, except where switch-tenders are stationed. At interlocking plants the switches are handled by the towerman and, of course, trainmen are not responsible for their position. A switch must not be left open for a following train unless in charge of a trainman of such following train. When trains back in on a siding it is expected

that the engineman will see that the switch is promptly closed and in proper position to avoid any danger to another train.

Train Safety

Both conductors and enginemen are responsible for the safety of their train and when any condition arises which is not provided for by the rules they must take every precaution to insure safety. Whenever any case of doubt or uncertainty arises the rules provide that the safe course must be taken and no risks run. In many cases trains may be delayed because of this, but it is better to have delay than accident; however, trainmen who have a clear understanding of the rules and their application will not be in doubt very often.

Train Orders

The most important point to be considered in the operation of trains on single track is the train dispatching. The time-table provides meeting points and passing points for all regular

trains and if regular trains were always on time and if it was not necessary to run sections or extra trains, and further if it was never necessary to annul a schedule, there would be no need for train orders. But trains are late and business requires extra trains, engines become disabled, and in short everything conspires to make train orders necessary. It follows that it is of the greatest importance that the rules governing the use of train orders should be thoroughly understood. Rules 201 to 223 are devoted to the handling of train orders and they should be given careful study. Train orders are to be used when a movement is not provided for by the timetable. They must not contain information or instructions not essential to the movement which is to be made. The forms, which are given in the Book of Rules must be used whenever they will accomplish the result desired. Most all standard forms of orders are so worded that when an order restricts one train it confers the right which has been taken away from the superior train upon the inferior train; in other words, standard train order forms are known as double orders for the reason that

each train order is given in the same words to all persons or trains addressed. When an order is addressed to an operator, which restricts the rights of any train, it must be respected by the conductor and engineman of such train the same as if it were addressed to them.

Rule 208 provides for the sending of train orders and states that the several addresses must be in order of superiority of trains; that is, an order must first be addressed to the train whose rights are to be restricted thereby. The revised Standard Code has given us two rules 208A and 208B; 208B is worded so that an order must be sent to the operator at the waiting or meeting point whenever possible. When a meeting order or a wait order is sent to the operator at the meeting or waiting point, it is called a middle order; that is, it is the order at the meeting or waiting point between the two or more trains which are concerned. When this middle order is sent to the operator at the meeting or waiting point he must deliver copies of the order to all trains affected until all have arrived from one direction, after which, if he has no further orders, he may take in his signal.

Rule 208A does not provide for the order to be sent to the meeting or waiting point. The two rules are inserted in the Standard Code so that roads may take their choice of the two methods.

The Standard Code does not place any restriction upon the use of either a 31 or a 19 order. A 19 order is one which is to be delivered to a train while in motion unless such order restricts the train at the point at which the order is delivered, in which case the train must be brought to a stop before delivery of the order is made. A 31 order is one which requires the signature of the conductor before "complete" is given.

Unless otherwise directed operators must repeat an order back as soon as it has been sent. Sometimes it is desired that an order which has been sent to the superior train should not be repeated so as to permit the inferior train to receive its order more quickly. To permit this, it has been arranged that the operator holding the order for the superior train can acknowledge the receipt of the order without repeating it. The rule governing this is so arranged that the operator must give his acknowledgment in the

following form: "X 10 to number 21" followed by the operator's initials and office signal. Ten is the number of the train order and 21 is the number of the train addressed. If the line fails before an office has repeated an order or before the X response has been sent, the order at that office is of no effect and must be there treated as if it had not been sent.

It is sometimes necessary to send a train order to a train at a non-telegraph station, and the Standard Code provides that this may be done by addressing the order to the train at the point where it may be, in care of some person who can deliver it. In such cases the order is usually sent in care of the conductor of some other train. When the "31" form of train order is used, "complete" will be given upon receipt of the signature of the person by whom the order is to be delivered. This person must be supplied with copies for the conductor and engineman of the train addressed and also a copy on which he shall take their signatures. The copy on which the signatures are taken must be delivered to the first operator accessible, who must preserve it and at once transmit the signatures of the con-

ductor and engineman to the train dispatcher. When orders are delivered in this manner they must be acted on as if "complete" had been given in the usual way. When an order is sent in this manner to a train, the superiority of which is thereby restricted, "complete" must not be given to an inferior train until the signatures of the conductor and engineman of the superior train have been sent to the train dispatcher.

When a train is named in a train order by its schedule number alone all sections of that schedule are included and each must have copies delivered to it. For example, if No. 10 receives an order to meet No. 15 at F and there are five sections on No. 15, each section of No. 15 must have copies of the order delivered to it and all five sections have a right to go to F to meet No. 10. Train orders which are once in effect continue so until fulfilled, superseded, or annulled. Any part of an order specifying a particular movement may be either superseded or annulled. Orders held by or issued for or any part of order relating to a regular train become void when such train loses both right and schedule as prescribed by Rules 4 and 18 or is annulled.

When an operator has given a clearance to a train, or when the engine of a train has passed the train order signal, the operator must not repeat, or give the X response, to a train order for such train until he has obtained the signatures of both the conductor and the engineman to the order. The reason for this rule lies in the fact that when an order is repeated or when the "X" response is given it is a guarantee to the train dispatcher that the train to which the order is addressed will be held until the order is delivered to it and in case that the train is in possession of a clearance or if the engine has passed the train order signal, while such signal was in the clear position, trainmen are not held under the rules, so that the signature of both engineman and conductor must be obtained to the order to insure its delivery.

Forms of Train Orders

The Standard Code provides forty-two examples for the movement of trains. Two or more of these examples may be combined when desirable. When examples are combined the

train order as a whole should not contain any information which does not directly affect the first train named in the order. These forty-two examples are classified under twelve forms. The first is Form A, for fixing meeting points between opposing trains. This form is self-explanatory and needs no comment except that it should not be used unless the trains are actually to meet at the designated point. Form B is used for directing a train to pass or run ahead of another train. Five examples are shown under this form. Example 3, of Form B, provides for an extra train to run ahead of a regular train and the explanation states that the second named train must not exceed the speed of the first named train between the points designated. What the explanation really means is that the second named train must run with such caution as will prevent accident with the first-named train. When an inferior train receives an order to pass a superior train, right is conferred to run ahead of the train passed from the designated point. Form C is for giving right to a train over an opposing train; in other words this form is used to reverse the rights of trains. If the trains meet at either

of the designated points, the first named train must take the siding, but if they meet between the designated points, the second named train must take the siding. Form E is for time orders. Four examples are given under this form, all of which may be used in connection with an extra train created by the third example of form G and the times at each point stated in that example have the same meaning as the schedule times when a regular train is named. For example, an order may be given as follows: "Eng. 77 run extra leaving A on Thursday, Feb. 17, as follows, with right over all trains: Leave A 11:30 P.M., leave C 12:25 A.M., leave E 1:47 A.M., arrive F 2:22 A.M." After the above order has been given, in case it is ascertained that extra 77 will not be ready to leave A until one hour after that time, an order may be issued reading as follows: "Extra 77 run one hour late A to F." Such an order gives trains receiving it the right to consider the time of extra 77 as being just one hour later at each of the stations named in the running order of extra 77. This saves the trouble of reissuing the schedule order as was necessary before the Standard Code was

revised in 1906. Form F is for sections. Nine examples are shown under this form. The first two are single-order examples. The first example is to be used when the number of the engine for which signals are displayed is unknown, and this is to be followed by the second example. Examples 6, 7, and 9 are used to withdraw and reverse the position of sections. The explanation of these examples fails to state that in such cases all train orders affecting the sections involved should be exchanged, but it is important that such orders should be exchanged, and trainmen must bear this in mind when they receive any of these examples under Form F.

Form G is for running extra trains. Three examples are shown under this form. All three forms are self-explanatory.

Form H is for creating a work extra. Six examples are shown under this form. The first example directs an engine to work between certain points and times and when such an order is received the work extra must, whether standing or moving, protect itself against extras within the working limits in both directions as prescribed

by rule. The time of regular trains must be cleared. When it is desired that a work extra should not protect against other extras, the words "Not protecting against extras" may be added to the order. When a work extra has been instructed by order to not protect against extra trains and afterwards it is desired to have it clear the track for, or protect itself after a certain hour against, a designated extra, an order may be given in the following form: "Work extra 292 clears (or protects against) extra 76 East between D and E after 2:10 P.M." When such an order has been issued extra 76 East must not enter the working limits before 2:10 P.M. and will then run expecting to find the work extra clear of the main track or protecting itself as the order may require. When it is desired that a work extra be permitted to work on the time of a regular train under the protection of a flag, the following form may be used: "Work extra 292 protects against No. 55 between D and E." The regular train receiving this order will run expecting to find the work extra under the protection of a flag. Whenever extra trains are run over working

limits they must be given a copy of the order sent to the work extra. Should the working order instruct a work extra to not protect against extra trains in one or both directions, then extra trains must protect against the work extra as prescribed by Rule 99. When the work-train order indicates that the work extra is protecting itself against other trains, they will run expecting to find the work extra protecting itself.

Form J is an order for holding trains. It will only be used when necessary to hold trains until orders can be given or in case of emergency.

Form K is for annulling a schedule or a section. When a schedule or a section has been annulled it cannot be restored between the points named.

Form L is for annulling a train order.

Form M is for annulling part of a train order.

Form T is for superseding an order or part of an order. When an order or part of an order is superseded the words "instead of" must always be used.

Train Order Combinations

Wait Order.—In case No. 1 is directed by train order to wait at C until 10:45 A.M. for extra 15 east, some trainmen think that the order permits the extra to use up to 10:45 A.M. to get clear at C, notwithstanding the fact that they know perfectly well that the extra must clear the schedule time of No. 1 at least five minutes. They figure that in some manner the train order permits them to use up to the time named in the order. The fact is that when a wait order is used the explanation to the order governs the movement. In this case the third example of Form E is used and the explanation states that the first named train must not pass the designated point before the time given, unless the other train has arrived. The extra is required to run with respect to the time specified, at the designated point or any intermediate station where the schedule time is earlier than the time specified in the order, as before required to run with respect to the schedule time of No. 1. This explanation makes it clear that extra 15 must consider the schedule time of No.

1 at C, or any intermediate station where No. 1's schedule time is earlier than the time stated in the order, as being 10:45 A.M. The explanation further directs that extra 15 must run with respect to the time stated in the order as before required to run with respect to the regular schedule time. By referring to rule 87, the rule which governs extra trains in their movements against regular trains, it will be found that an extra train must clear the time of a regular train 5 minutes unless otherwise provided; therefore extra 15 must clear the time stated in the order the same as it clears the regular schedule time of No. 1.

Some dispatchers do not hesitate to send an order directing a superior train to take siding and wait at a certain station for an inferior train. This I regard as bad practice, for the reason that no explanation is given for such an order. That is, trainmen do not all understand the order alike. For example, No. 1 is directed to take siding and wait at F until 7:35 A.M. for extra 123. Suppose that No. 1 does not arrive at F until 8 A.M., will No. 1 take siding? If not, will extra 123 understand that it is to get clear after

7:35 A.M. Such questions as these come up nearly every time this order is used and it is what can be called an improper order because it is one which is not authorized. My understanding of the order is that the wait at F is limited by the terms of the order to 7:35 A.M., but the provision in the order to take siding is not limited and cannot be fulfilled without No. 1 actually taking a siding at F for the extra. This it must do regardless of the time it may arrive at F. In my opinion a superior train should not be put on the siding at the meeting point unless conditions are such that it is necessary.

In case No. 2 is directed to run two hours late from A to D, would an inferior train at E have any right to use the time to make D against No. 2? This is a question which is often asked. The answer is: a run late order makes the schedule time of the train named between the stations mentioned as much later as stated in the order. A train receiving this time can use it only between the points named in the order. Under such an order, if no arriving time is shown at D, No. 2 may leave C 2 hours late and can arrive and leave D as soon as it can after leaving C 2 hours

late, as the order practically expires at C because the train has no arriving time shown at D, and, therefore, is not required to arrive at D two hours late.

Right-of-Track Order.—The intention of a right-of-track order is simply to reverse the rights of the trains named. For example, No. 2 is a train of the same class as No. 1, but it is a train of superior direction; if No. 1 is given right over No. 2 from G to A, No. 1 becomes the superior train within the limits named. The trains will proceed exactly as before but with the difference that No. 2 must clear the time of No. 1 instead of No. 1 clearing the time of No. 2. After such an order has been given, if it later becomes desirable to make a meeting point between No. 1 and No. 2 at D, such meeting order does not in any way supersede or affect the right of track order, except that No. 1 cannot proceed beyond D before No. 2 arrives. No. 2 in such a case must take siding at D. In other words No. 2 must be governed in its movements against No. 1, when No. 1 holds a right-of-track order over No. 2, the same as No. 1 was before governed with respect to No. 2.

No. 1, after being given right over No. 2, may be given an order to wait at certain stations for No. 2, and No. 2, being an inferior train, can use such time under the same restrictions as any other inferior train.

Train Order Date.—The date of a train order bears the same relation to the text of a train order as the date of a letter does to the text of a letter, and no more. The date and time are not of special importance, except as a matter of record, only when the date or time seems to be unreasonable. That is, if the date or time seems to indicate that there has been some error made, then attention should be called to it. The Standard Code of Train Rules does not require that the time and date of an order must conform to a certain time; neither is it necessary that the date of an order correspond with the date of the train which it is issued for. Suppose that No.

is due to leave its initial station at 1 A.M., in case an order is issued before midnight and dated Feb. 1, such order is good for No. 1 of Feb. 2, the fact that it was issued before midnight making no difference at all. Time and date must always be filled in, but they are intended to in-

dicating when the order was sent, as a matter of record, and not to govern the use of the order.

In connection with this it must be remembered that Rule 220 provides that a train order once in effect continues so until fulfilled, superseded, or annulled.

It is true that some roads make a practice of reissuing orders at midnight in cases where an order is kept standing for all trains; but this is not done because the order would expire at midnight, neither is it done because the order would not be good for a train of a date other than that which appears on the train order; but it is done to keep the order up-to-date so that it may be kept in the train dispatcher's book of the current day.

Fulfilling an Order

To fulfill an order every provision contained in an order must be executed. That is, if No. 1 holds an order to meet No. 2 at B, the order is not fulfilled until No. 1 has actually met No. 2 at B. If No. 1 holds an order to meet No. 2 at B with the further statement that No. 2 will take siding, then the order is not fulfilled until No. 1 meets'

No. 2 at B and No. 2 has actually taken the siding for No. 1. If No. 2 is directed to wait at B, until 1 A.M. for No. 1, the order is fulfilled when No. 1 arrives at B, or if No. 1 fails to make B on the order, then it is fulfilled when the time expires at 1 A.M.

When a train is to be run to its terminal or to the end of double track for an opposing train, a time order or a right-of-track order should be used. A meet order is objectionable because under such circumstances trains seldom meet, and unless they do actually meet the order remains unfulfilled, regardless of the fact that the object of the order has been accomplished.

Superseding An Order.—To supersede an order the words “instead of” must always be used except where the rules specially permit of a supersedure without the use of such words. Some of the examples in Form F are so worded that they supersede a former example without the use of the words, “instead of.” When an order is superseded only such portion of the order is affected as is referred to by the order containing the term “instead of.” For example: No. 1 holds an order reading, “No. 1 meet No.

4 and No. 6 at B." Later, No. 1 gets an order reading, "No. 1 meet No. 4 at C instead of B." In such a case the only portion of the first order which is superseded is the meeting point between No. 1 and No. 4; that part of the first order referring to No. 6 still remains in effect.

When Schedule Number is Used in an Order all Sections are Included.—In case the following order is issued, "No. 1 meet No. 2 at B," such order includes all sections which are running on either schedule. For example, if there were four sections on No. 1 all four sections would be given copies of the order and each section could go to B on the order to meet No. 2.

In case No. 45 is given an order to run ahead of No. 1 from A to H, if there are two sections of No. 1 and the first section is given orders to pass No. 45 at C, No. 45 may proceed to H ahead of the second section, because all sections are included in the order for the reason that No. 1 is named by its schedule number alone.

After No. 2 has been directed by order to meet No. 1 at B, if No. 2 later receives an order to meet 1st No. 1 at C instead of B, it supersedes the first order only so far as first No. 1 is

concerned, but does not affect following sections; therefore, second and all following sections of No. 1 have authority to go to B for No. 2. This point should be thoroughly understood, as it is an important one in the handling of trains.

Orders Expire When a Train Expires.—When any train expires by limitation of time or place or when a train expires because of change of time-table or because it is annulled, all orders which it holds become void. This is a principle of operation based upon the supposition that a train order is issued because of the existence of a train and that the order should cease to exist when the train for which it was issued ceases to exist; otherwise complications without number would arise.

If engine 23 is given an order to run from A to B as an extra train, when it reaches B all of its orders expire, and if later it is moved to another point it must be given all orders necessary for its protection and movement.

Change of Time-Table.—No. 7 on the old time-table is due to leave its initial station at 11:40 P.M. A new time-table takes effect at 12:01 A.M. Oct. 25 on which No. 7 is shown. It

corresponds in class, day of leaving, direction, initial, and terminal stations, but it is due to leave its initial station at 9 P.M. instead of 11:40 P.M. In such a case No. 7, of the old time-table, may assume the schedule of the new time-table at 12:01 A.M., Oct. 25, and then proceed as a delayed train. No. 7, which is on the road or due to be on the road, is a train of Oct. 24 and the schedule of the same number on the new time-table which is put into effect at 12:01 A.M. Oct. 25 is also a schedule of Oct. 24 because it is due to leave its initial station at 9 P.M., Oct. 24; therefore as this schedule corresponds as to date, class, direction, initial, and terminal stations, the train which is running on No. 7's schedule on the old time-table may assume the same schedule of the new time-table.

If No. 7 which was shown on the old time-table was due out of its initial station at 12:15 A.M. instead of 11:40 P.M., then No. 7 of Oct. 25 could not run until 9 P.M. Oct 25 as the train which would correspond in date with the new schedule left its initial station 23 hours and 45 minutes before the new time-table took effect.

The rule for change of time-tables is quite

complicated because there are so many things in connection with making changes of time which must be taken into consideration; however, it is not impossible of logical interpretation. The rule is faulty in that it leaves to inference several things which it should explicitly state, but most of the considerations in connection with a change of time-tables are definitely provided for and there need be no misunderstanding regarding any of the schedules which are involved in a change if the intention of the rule is understood. One of the points which is left without definite statement is the validity of a schedule, the rule simply stating that a train will assume the schedule under certain conditions, leaving trainmen to infer that the schedule will be in effect, regardless of the fact that the rule attempts to explicitly provide for the taking effect of all schedules. Another point which is left to inference is the fact that the old schedule may be used on the old time-table over a part of the division and the new schedule over the other part of the division when they properly correspond, without violating the last paragraph of the rule, which states that only one schedule of

the same number and day shall be in effect on any division.

I am criticising Rule 4 to this extent for the purpose of more clearly explaining its meaning. It is expected that two schedules will be in effect in certain cases, but not over the same portion of a division. That is, the train of the old time-table may use the schedule up to the time when the new time-table takes effect, at which time, if the new schedule corresponds as required, the train may assume such new schedule from that point. In this manner two schedules of the same number and day are in effect on the same division but not over the same portion of the division.

No. 23 of the old time-table is due to leave its initial station at 7 A.M. and runs to F. A new time-table takes effect at 9 A.M., the same day, showing No. 23, exactly the same as on the old time-table in all respects, except that it is due to leave its initial station at 10 A.M. Can No. 23 wait at B, the station where it is when the new time-table takes effect and proceed as No. 23 when the time is up? The time is three hours later in this case, on the new time-table, than c

the old time-table. Under such conditions the train of the old time-table can wait at B and take up the time of the same schedule on the new time-table when it is due at such point. The rule presumes that the train of the old schedule was one authorized by the old time-table and still in possession of that authority when the new time-table went into effect. If so the right of the train to assume the schedule is simply held in abeyance until the train is due at that point.

If the schedules correspond as to number, class, day of leaving, direction, and initial, and terminal stations, the change of the time does not make any difference except that if the time is changed so much at the initial station as to put it on a different date from that on which the train left its initial station, then the train could not assume the schedule as it would not correspond as to date.

No. 10 is due to leave its initial station at 6 A.M. and its schedule on the old time-table is marked "daily except Sunday." A new time-table takes effect at 7:15 A.M., Sunday, and the new schedule shows No. 10 as a "Daily" train; but in all other respects the schedules cor-

respond. In such a case No. 10 cannot run on the day the new time-table takes effect, for the reason that Rule 4 specially states that schedules take effect at their initial stations after the time-table takes effect, and as this schedule is due out before the time-table takes effect it is void for that day. This because the schedule of the old time-table was not "daily" and did not authorize a train for Sunday, to assume the new schedule. The only way a schedule takes effect before it is due to leave its initial station, after the new time-table takes effect, is when it corresponds as required, but in this case there was no schedule of that date to correspond with the new schedule and, therefore, the rule could not put the new schedule into effect.

Clearance Cards

Rule 221 (B) provides that a fixed signal must be used at each train order office. This signal must indicate stop when trains are to be stopped for orders, but when there are no orders this signal must indicate clear. When an order is to be sent to that office the dispatcher gives the

signal "19" or "31" followed by the direction and the operator must immediately display his signal to stop trains in that direction, and until the order is delivered, the operator must keep the signal in the stop position. It sometimes happens that the train for which the order is intended is not the first one to arrive, from the direction in which the signal is displayed, and it is at this point that the "clearance card" is used. This is not, however, the only case in which it is used. Sometimes an order is addressed to two or more trains, or there are orders which are addressed separately to two or more trains and in such a case after the first train has received its orders, a clearance card is given it, because the operator has no authority to restore the signal to "proceed" so long as he holds an order for any train in that direction. The Rules provide that while "stop" is indicated, by a train order signal, that no train must pass it without a clearance card, even though it has received orders at that station.

In some cases the Form J order is issued to an operator. This form is for holding trains until orders can be given or in case of emergency.

The explanation provides that after a train is so held it must not proceed until the order to hold is annulled, or an order given to the operator in the form, "—— may go." This order is to be addressed to the operator and will be delivered to conductors and enginemen of all trains affected. In such a case when the train has received the order reading, "—— may go," it cannot pass the train order signal without obtaining a clearance card, notwithstanding the fact that its order directs it to proceed. This may seem to some to be unnecessary but it is so arranged in order that the full value of the "stop" train order signal may be conserved.

The clearance card is also used for clearing trains at their initial stations. That is, when there are no train orders for a train it is given a clearance card; this is done to insure that the conductor of each train will report for orders before ordering his train to leave its initial station.

As its name implies the clearance card is for the clearing of a train and permitting it to proceed when it would otherwise be held.

FORM—(A).

(NAME.) COMPANY.

CLEARANCE CARD.

Dover 9 15 A M March 21 19 06

Conductor and Engineman No 12

I have (3) (No) (No further) orders for your train.

Signal is displayed for _____
Extra 453

John Jones

Operator.

This does not affect any orders you may have received.

Conductor and Engineman must each have a copy, and see that their train is correctly designated in the above form.

(To be printed on yellow paper.)

Train Identification

There are at present a great many methods used in train identification. Some of these methods depend upon the engine number being given in a train order, whenever it becomes necessary for a train to have a train order, but it can be readily seen that such identification is only partial and of doubtful value, because it is not uniform between all trains. To illustrate, when the engine number is used in a train order it is for the purpose of identification as between the trains receiving the order, but there are a great many inferior trains which receive no orders at all about superior trains and consequently do not know what engines such superior trains may have. There have been a great many things tried for train identification, the most common being the use of the conductor's name in train orders and the further dependence of his appearance for identification at the meeting point, in case a meeting point is made. Some lines exchange train number slips, but in many cases this is merely an empty form, for the train holding main track in many cases is

so far by the switch before the slips are read that if it proved to be the wrong train which was on the siding an accident might result before it could be brought to a stop. Cabooses are sometimes equipped with cupola train number indicators and this is a very good method of identification, but it does not extend to passenger trains.

Trainmen should in all cases give special attention to train identification. It is a very important consideration and does not seem to be covered in all cases as carefully as its importance seems to indicate that it should be.

EXAMINATION QUESTIONS

In the foregoing pages the Rules and their correct application have been fully explained, and to firmly fix in the student's mind, the knowledge which has been obtained therefrom, and to give him confidence, a set of questions have been arranged. The student should not think that he has properly mastered the contents of this book until he is able to answer all of the questions without its being necessary for him to refer to the subject matter. When he can do this he need not fear any examination on train rules, for he will be able to pass any examination with credit.

Questions on General Rules

1. Question.—Are you required to have a copy of the book of Rules?
2. Q.—Are you required to understand the Rules?

3. Q.—If in doubt as to the meaning of a Rule what must be done?

4. Q.—Do you know that you are required to pass certain examinations?

5. Q.—In case a Rule or special instruction has been violated, what must be done?

6. Q.—Are employees permitted to use intoxicants?

7. Q.—Where is the use of tobacco prohibited?

8. Q.—Do you understand that employees must be neat in appearance?

9. Q.—Do you understand that you are expected to safeguard the company's property?

10. Q.—Do you understand that persons authorized to transact business at stations or on trains must be orderly and avoid annoyance to patrons?

Questions on Definitions

11. Q.—What is an engine?

12. Q.—What is a train?

13. Q.—What is a regular train?

14. Q.—What is a section?

15. Q.—What is an extra train?

16. Q.—How many kinds of extra trains are designated?

17. Q.—What is a superior train?

18. Q.—What is a train of superior right?

19. Q.—What is a train of superior class?

20. Q.—What is a train of superior direction?

21. Q.—What is a time-table?

22. Q.—What is a schedule?

23. Q.—What is a division?

24. Q.—What is a sub-division?

25. Q.—What is a main track?

26. Q.—What is a single track?

27. Q.—What is a double track?

28. Q.—What is three or more tracks?

29. Q.—What is meant by current of traffic?

30. Q.—What is a station?

31. Q.—What is a siding?

32. Q.—What is a fixed signal?

33. Q.—What is a yard?

34. Q.—What is a yard engine?

35. Q.—What is a pilot?

Standard Time

- 36. Q.—Who are required to use watches which have been examined and certified to?
- 37. Q.—When must watches be compared?
- 38. Q.—What is a standard clock?
- 39. Q.—How often will standard time be transmitted?
- 40. Q.—Must the time when watches are compared be registered?

Time-Tables

- 41. Q.—How is it known when a new time-table will take effect?
- 42. Q.—When do the schedules of a new time-table take effect?
- 43. Q.—How must schedules correspond to permit a train which is due on the road at the time of change to take the new schedule of the same number?
- 44. Q.—How is the date of a schedule determined?
- 45. Q.—May more than one schedule of the same number and day be run?

46. Q.—What is meant by the last paragraph of Rule 4?

47. Q.—May more than two times be given for a train at any station?

48. Q.—When only one time is given what is it if not otherwise indicated?

49. Q.—Where does the time apply?

50. Q.—How are schedule meeting and passing stations indicated?

51. Q.—When the schedule arriving and leaving time are shown and both are meeting or passing times, how is the fact indicated?

52. Q.—When trains meet at a siding which extends between two adjoining stations how will the fact be indicated?


53. Q.—What is the sign for a regular stop?

54. Q.—What is the sign for a flag stop? For meal stop?

55. Q.—What indicates leave and what indicates arrive?

Signal Rules

56. Q.—What employees are required to provide themselves with proper appliances for giving signals?



57. Q.—Must such appliances be kept in good order?
58. Q.—What must be used by day?
59. Q.—What must be used at night?
60. Q.—When will night signals be displayed?
61. Q.—When the weather or other conditions obscure day signals, what must be done?

Visible Signals

62. Q.—What color is used for stop?
63. Q.—What color is used for proceed?
64. Q.—What color is used for proceed with caution?
65. Q.—What is green and white used for?
66. Q.—What is blue used for?

Hand, Flag, and Lamp Signals

67. Q.—How is a stop signal given?
68. Q.—How is a proceed signal given?
69. Q.—What is the signal to back?
70. Q.—What is a signal that the train has parted?
71. Q.—What is the signal to apply air brakes?

72. Q.—When any object is waved violently by anyone on or near the track what should be done?

Audible Signals

73. Q.—How is the signal given by the steam whistle to indicate stop?

74. Q.—Release brakes?

75. Q.—Flagman to go back and protect rear of train?

76. Q.—Flagman return from west or south?

77. Q.—Flagman return from east or north?

78. Q.—How is the train parted signal given?

79. Q.—How is any signal not otherwise provided for answered?

80. Q.—What is the signal to back?

81. Q.—What is the call for signals?

82. Q.—What signal is given to call attention of yard engines, extra trains, or trains of the same or inferior class or inferior right to signals displayed for a following section?

83. Q.—What signal is given when approaching public crossings at grade?

84. Q.—What signal is given when approach-

ing stations, junctions, and railroad crossings at grade?

85. Q.—What signal is an alarm for persons or cattle on the track?

86. Q.—What does the explosion of one torpedo mean?

87. Q.—What does the explosion of two torpedoes mean?

Communicating Signals

88. Q.—What does two sounds indicate when standing?

89. Q.—When running?

90. Q.—What does three sounds indicate when running?

91. Q.—When standing?

92. Q.—What does four sounds indicate when running?

93. Q.—When standing?

94. Q.—What does five sounds indicate when running?

95. Q.—When standing?

Train Signals

96. Q.—What must be displayed to the front of every train by night?

97. Q.—When must the headlight be concealed?

98. Q.—What will yard engines display by night?

99. Q.—Will yard engines display markers?

100. Q.—What are markers?

101. Q.—Where are they displayed?

102. Q.—How are markers changed when a train goes on the siding and is clear of the main track?

103. Q.—What signals will sections display on the front of the engine?

104. Q.—Will the last section display signals?

105. Q.—What signals will extra trains display by day and also by night?

106. Q.—When two or more engines are coupled together will all of them display signals for following sections?

107. Q.—When two or more engines are coupled on an extra will all of the engines display the white signals?

108. Q.—In case one flag is displayed where the rule requires two, what meaning will it have?

109. Q.—Is the proper display of signals required?

110. Q.—When cars are being pushed by night except when making up trains in the yard what must be done?

111. Q.—Must each car in a passenger train be connected with the engine by some signal appliance?

112. Q.—What is a blue flag or a blue light used for?

113. Q.—May a car be coupled to or moved when it is protected by a blue flag or lamp?

114. Q.—What employees may remove a blue signal?

115. Q.—May cars be placed on the same track so as to intercept the view, when a car is protected by a blue signal?

Use of Signals

117. Q.—How will a signal which is imperfectly displayed be regarded?

118. Q.—How will the absence of signal at a place where a signal is usually shown be regarded?

119. Q.—Must such occurrences be reported to the superintendent?

120. Q.—What will a combined green and white signal be used for?

121. Q.—What is a flag station?

122. Q.—When a train is to be stopped at a point which is not a flag station by its schedule what must be used?

123. Q.—Are fixed signals to be acknowledged?

124. Q.—Are other signals which are given to stop a train to be acknowledged?

125. Q.—When will the engine bell be rung?

126. Q.—When will the whistle be sounded?

127. Q.—How long must the bell be rung when it is rung for public crossings?

128. Q.—How will the whistle or bell be used?

129. Q.—When will watchmen who are stationed at public crossings use red signals?

Superiority of Trains

130. Q.—How is a train superior to another?

131. Q.—How is class conferred?

132. Q.—How is direction superior and how conferred?

133. Q.—How is right conferred?

134. Q.—What is meant by right?

135. Q.—Which is superior: right, class, or direction?

136. Q.—To what trains are first-class trains superior?

137. Q.—What are second-class trains superior to?

138. Q.—How is superiority of direction conferred by the time-table?

139. Q.—Are extra trains inferior to regular trains?

Movement of Trains

140. Q.—How long are time-tables in effect?

141. Q.—How are time-table schedules fulfilled?

142. Q.—When a regular train is twelve hours behind its schedule arriving or leaving time at any station, how must it proceed?

143. Q.—May a train which overtakes its schedule after once becoming twelve hours late, assume it again without orders to do so?

144. Q.—May it if it receives an order to do so?

145. Q.—What must be ascertained before a train leaves its initial station, or a junction, or passes from double to single track?

146. Q.—How is this usually ascertained?

147. Q.—Must the proper signal be given before a train starts?

148. Q.—Must the signal be given by the person authorized or who is in charge of the train?

149. Q.—When a train of one schedule is on the time of another schedule in the same direction and of the same class, what will it do?

150. Q.—May trains of one schedule pass trains of another schedule of the same class?

151. Q.—May extras pass extras?

152. Q.—Must an inferior train clear the time of a superior train in the same direction?

153. Q.—How much must the inferior train clear the time of the superior train?

154. Q.—When must an inferior train be

clear of the time of a first-class train in the same direction?

155. Q.—How will an inferior train be governed with respect to an opposing superior train?

156. Q.—How much must an inferior train clear the time of an opposing superior train?

157. Q.—If the inferior train fails to clear the main track by the time required by rule, what must be done?

158. Q.—Must extra trains clear the time of regular trains?

159. Q.—How will extra trains be governed with respect to opposing extra trains?

160. Q.—At meeting points between trains of the same class, when must the train in the inferior direction be clear?

161. Q.—When extra trains meet which extra must take the siding?

162. Q.—Must trains pull into the siding, when possible?

163. Q.—If a train cannot pull into the siding, what must be done?

164. Q.—How much must an inferior train clear the time of a superior train at meeting points?

165. Q.—When must trains of the same class stop at schedule meeting stations?

166. Q.—When the expected train of the same class is not found at the schedule meeting point, what must the superior train do?

167. Q.—At what point must the superior train stop, in case it is necessary to stop?

168. Q.—Why is Rule 90 necessary?

169. Q.—Where no form of block signals is used, how far apart must trains moving in the same direction keep?

170. Q.—Is there any exception to the above? If so, what?

171. Q.—May a train arrive at a station ahead of its schedule arriving time?

172. Q.—May a train leave a station ahead of its schedule leaving time?

173. Q.—How must extra trains move through yard limits?

174. Q.—Against what trains may the main track be used within yard limits, by protecting?

175. Q.—What class trains must move through yard limits prepared to stop?

176. Q.—If one train overtakes another train

disabled so that it cannot move, what will it do?

177. Q.—Is it necessary to exchange schedules and orders in every case?

178. Q.—When the disabled train is ready to proceed, what will it do?

179. Q.—When a train unable to proceed against the right or schedule of an opposing train, is overtaken between telegraph stations by an inferior train or a train of the same class having right or schedule which permits it to proceed, what action will be taken?

180. Q.—If opposing trains are met under such circumstances, what must be done?

181. Q.—May more than one train be run on the same schedule?

182. Q.—Has each section equal time-table authority?

183. Q.—May a train display signals without orders from the train dispatcher?

184. Q.—When signals displayed for a section are taken down at any point before that section arrives, what action will the conductor take?

185. Q.—May extra trains be run without orders from the train dispatcher?

186. Q.—How must trains approach the end of double track, junctions, railroad crossings at grade and drawbridges?

187. Q.—Must trains stop where required by law?

188. Q.—When must the flagman go back to protect the rear end of train?

189. Q.—How far must the flagman go back?

190. Q.—May he return when recalled?

191. Q.—What must he do before he returns?

192. Q.—How must the front of the train be protected when necessary?

193. Q.—When flagman goes back to protect rear of train who will take his place?

194. Q.—When a train parts while in motion, what must be done?

195. Q.—What signal must be given?

196. Q.—May the detached portion be moved before the head end returns?

197. Q.—What precaution will be taken when cars are being pushed by an engine?

198. Q.—Is this necessary when making up trains in yard?

199. Q.—How must information concerning the condition of track or bridges be given?

200. Q.—How must switches be left after having been used?

201. Q.—Who is responsible for the position of switches?

202. Q.—Are conductors responsible where switch tenders are stationed?

203. Q.—Who are responsible for the safety of their train?

204. Q.—In case the rules fail to provide protection, must conductors take extra precaution to avoid accident?

205. Q.—In cases of doubt, what must be done?

Rules for Movement by Train Orders

206. Q.—For what movements will train orders be used?

207. Q.—What must they contain?

208. Q.—Must the prescribed forms be used?

209. Q.—Must train orders be given in the same words to all persons addressed?

210. Q.—How will train orders be numbered?

211. Q.—To whom must train orders be addressed?

212. Q.—Will the point at which an order is received be named?

213. Q.—Who will the orders for a train be addressed to?

214. Q.—When an order is addressed to an operator which restricts the rights of a train, how will conductors and enginemen regard it?

215. Q.—What record must be kept of train orders?

216. Q.—How will regular trains be designated?

217. Q.—How will extra trains be designated?

218. Q.—To transmit a train order, what signal will be given?

219. Q.—Must the number of copies be stated if more or less than three copies are required?

220. Q.—When a train order is to be given to two or more offices how will it be sent?

221. Q.—Must train orders be addressed in the order of superiority of the trains involved?

222. Q.—When the rules require that a copy of the order shall be sent to the operator at the waiting or meeting point what will the operator at such point do?

223. Q.—Must orders be written during transmission?

224. Q.—If a sufficient number of copies is not made at the first writing, what must be done?

225. Q.—Who must sign for a “31” order?

226. Q.—May an order be acted on before “complete” is given?

227. Q.—Who will deliver a “19” order?

228. Q.—When delivery to engineman will take the operator from the immediate vicinity of the office who will deliver to engineman?

229. Q.—When a “19” order is issued, which restricts the superiority of a train at the point at which it receives the order, what precaution must be taken?

230. Q.—When it is desired to have the operator acknowledge the receipt of an order without repeating it, what is done?

231. Q.—When may “complete” be given to a train order for delivery to an inferior train?

232. Q.—After an order has been repeated, and before “complete” has been given, how must an order be treated?

233. Q.—If the line fails before an office has repeated an order or before the “X” response

has been given, how must the order be treated?

234. Q.—What copy of an order must the operator preserve?

235. Q.—What are the requirements as to record and delivery of an order at the dispatcher's office?

236. Q.—How will a train order be addressed for a train at a point which is not a telegraph station?

237. Q.—When the "31" form is used for this purpose, when may "complete" be given?

238. Q.—How will the person in whose care the order is addressed make delivery and what record must he have?

239. Q.—How will such orders be acted on?

240. Q.—When may "complete" be given to an order which is sent to a train at a non-telegraph station when such order restricts the superiority of train addressed?

241. Q.—When a train is named in a train order by its schedule number alone, what sections are included?

242. Q.—Must each section have copies of the order?

243. Q.—May an operator repeat or give the “X” response to an order for a train the engine of which has passed his train order signal when the signal was in the proceed position?

244. Q.—What must the operator do before he acknowledges receipt of the order?

245. Q.—How long do train orders once in effect remain in effect?

246. Q.—May any particular movement be superseded?

247. Q.—May any particular movement be annulled?

248. Q.—When do orders held by, or issued for, or any part of an order relating to a regular train, become void?

249. Q.—Must a fixed signal be used at each train order office?

250. Q.—What must such train order signal indicate?

251. Q.—When the signal has been cleared to allow a train to pass, what must be done?

252. Q.—What must operators do with respect to the arrival and departure of trains?

253. Q.—What signs and abbreviations may

Forms of Train Orders

254. Q.—What is the purpose of Form A?

255. Q.—How will a train receiving a Form A order run?

256. Q.—What is Form B used for?

257. Q.—How will trains be governed under example 1?

258. Q.—When an inferior train receives an order to pass a superior train, what right is conferred?

259. Q.—What is Form C used for?

260. Q.—What right is conferred on the first named train?

261. Q.—Which train will take siding if the trains meet at either one of the designated points?

262. Q.—If the second named train reaches the point last named in the order before the other arrives, how may it proceed?

263. Q.—What is Form E used for?

264. Q.—When a train has been directed to run late between certain stations how must the train proceed?

265. Q.—How will other trains receiving the order be governed?

266. Q.—When a train has been directed to wait at a certain station for an inferior train, how will the superior train be governed?

267. Q.—How will the inferior train be governed?

268. Q.—When one or more trains have been directed to wait at certain stations until a certain time, how will such train or trains be governed?

269. Q.—How will inferior trains receiving the order be governed?

270. Q.—May time orders be used in connection with an extra train which has been created by the third example of Form G?

271. Q.—What is Form F used for?

272. Q.—What example will be used when the number of the engine for which signals are displayed is not known?

273. Q.—What example is to be used to follow the first example?

274. Q.—What example will be used for changing sections?

275. Q.—What example will be used to drop an intermediate section?

276. Q.—What example will be used to substitute one engine for another?

277. Q.—What example will be used to discontinue a section?

278. Q.—When it is desired to pass one section by another, what example will be used?

279. Q.—What form will be used when a section is to be annulled for which signals have been displayed?

280. Q.—What is Form G used for?

281. Q.—When the second example is used, how must the extra be governed?

282. Q.—What is Form H used for?

283. Q.—When example 1 is used, how will the work extra be governed?

284. Q.—Must the time of regular trains be cleared?

285. Q.—When a work extra has been directed to not protect against extra trains and afterward it is desired that the work extra clear the track or protect against an extra after a certain time what example will be used?

286. Q.—When example 4 is used, how will the extra train be governed?

287. Q.—When it is desired that a work extra may work on the time of a regular train under protection of a flag, what example is used?

288. Q.—Must work extras give way to all trains as promptly as they can?

289. Q.—When an extra is run over the working limits, must it be given a copy of the order held by the work extra?

290. Q.—If the order indicates that the work extra is protecting against extras, how will the extra be governed?

291. Q.—If the work order indicates that the work extra is not protecting against extras, how will the extra be governed?

292. Q.—What is a Form J order used for?

293. Q.—When a train has been held by a Form J order, when may it proceed?

294. Q.—What is Form K used for?

295. Q.—After a schedule has been annulled, may it be restored?

296. Q.—What is Form L used for?

297. Q.—May an order which has been annulled be reissued under its original number?

298. Q.—May it be reissued under another number?

299. Q.—What is Form M used for?

300. Q.—What is Form P used for?

301. Q.—How is the order given under this form?

ANSWERS TO EXAMINATION QUESTIONS

Note.—The answers have been kept separate from the questions in order that the student may have an opportunity to think out the answers for himself, for by so doing he gains knowledge and confidence in himself, but to permit the student to know beyond a doubt that he has given the correct answers to the foregoing list of questions, we append this list of answers. The number which has been given the question corresponds to the number of the answer.

1. Answer.—Yes.
2. A.—Yes.
3. A.—Apply to the proper authority for an explanation.
4. A.—Yes.
5. A.—The fact must be reported to superior officer.
6. A.—No.

7. A.—When on duty in or about passenger stations or in passenger cars.

8. A.—Yes.

9. A.—Yes.

10. A.—Yes.

Answers to Definitions

11. A.—A locomotive propelled by any form of energy.

12. A.—An engine, or more than one engine coupled, with or without cars, displaying markers.

13. A.—A train authorized by a time-table schedule.

14. A.—One of two or more trains running on the same schedule, displaying signals, or for which signals are displayed.

15. A.—A train not authorized by time-table schedule.

16. A.—Two; extra, and work extra. "Extra," for any extra train, and "work extra" for a work train.

17. A.—A train having precedence over another train.

18. A.—A train given precedence by train order.

19. A.—A train given precedence by time-table.

20. A.—A train given precedence in the direction specified in the time-table as between trains of the same class.

21. A.—The authority for the movement of regular trains subject to the rules. It contains the classified schedules of trains with special instructions relating thereto.

22. A.—That part of a time-table which prescribes class, direction, number, and movement for a regular train.

23. A.—That portion of a railway assigned to the supervision of a superintendent.

24. A.—A part of a division so designated on the time-table.

25. A.—A track extending through yards and between stations, upon which trains are operated by time-table or train order, or the use of which is controlled by block signals.

26. A.—A main track upon which trains are operated in both directions.

27. A.—Two main tracks, upon one of which

the current of traffic is in a specified direction, and upon the other in the opposite direction.

28. A.—Three (or more) main tracks, upon any of which the current of traffic may be in either specified direction.

29. A.—The movement of trains on a main track, in one direction, specified by the rules.

30. A.—A place designated on the time-table by name, at which a train may stop for traffic; or to enter or leave the main track; or from which fixed signals are operated.

31. A.—A track auxiliary to the main track for meeting or passing trains, limited to the distance between two adjoining telegraph stations.

32. A.—A signal of fixed location indicating a condition affecting the movement of a train.

33. A.—A system of tracks, within defined limits provided for the making up of trains, storing of cars and other purposes, over which movements not authorized by time-table, or by train orders, may be made, subject to prescribed signals and regulations.

34. A.—An engine assigned to yard service and working within yard limits.

35. A.—A person assigned to a train when the

TERMS AND DEFINITIONS

20. **A.**—That part of a railway controlled by train order.
21. **A.**—That part of a railway controlled by time-table.
22. **A.**—That part of a railway in the direction of travel of a train as between trains in motion.
23. **A.**—The instrument for the movement of a train in accordance with the rules. It contains the schedule of trains with special instructions covering accidents.
24. **A.**—That part of a time-table which prescribes the direction, number, and movement for a regular train.
25. **A.**—That portion of a railway assigned to the supervision of a superintendent.
26. **A.**—A part of a division so designated on the time-table.
27. **A.**—A track extending through yards or between stations, upon which trains are run by time-table.
28. **A.**—A track extending through yards or between stations, upon which trains are run by time-table.

the current of traffic is in a specified direction, and upon the other in the opposite direction.

28. A.—Three (or more) main tracks, upon any of which the current of traffic may be in either specified direction.

29. A.—The movement of trains on a ~~main~~ track, in one direction, specified by the rules.

30. A.—A place designated on the ~~time-table~~ by name, at which a train may stop for ~~traffic~~; or to enter or leave the main track; or from which fixed signals are operated.

31. A.—A track auxiliary to the ~~main track~~ for meeting or passing trains, limited to the distance between two adjoining ~~telegraph~~ stations.

32. A.—A signal of fixed ~~location~~ indicating a condition affecting the movement of trains.

33. A.—A system of ~~traffic~~ limits provided for the ~~control~~ of cars during of cars movements of ~~trains~~ where ~~described~~

engineman or conductor or both are not fully acquainted with the physical characteristics or running rules of the road, or portion of the road, over which the train is to be moved.

Standard Time

36. A.—Conductors and enginemen (and such others as may be designated).

37. A.—Before starting on each trip.

38. A.—One which has been designated as a "Standard Clock."

39. A.—Once every twenty-four hours.

40. A.—Yes.

Time-Tables

41. A.—The date and hour at which a new time-table will take effect is usually shown on the face of the time-table.

42. A.—Schedules of the new time-table take effect at their leaving time at their initial stations when such leaving time is the same or later than the time at which the new time-table takes effect, with the exception that in case the old and the new schedules correspond as required, the new

schedule will take effect the moment the new time-table takes effect.

43. A.—They must correspond in number, class, day of leaving, direction, and initial and terminal stations.

44. A.—Schedules on each division date from the time they are due to leave their initial stations on such division.

45. A.—Not unless such schedules correspond as required by Rule. In case they do, a train authorized by the old schedule may use such schedule as far as it can, before the new time-table takes effect, after which it may continue to the end of its run on the new schedule.

46. A.—The last paragraph of Rule 4 means that not more than one schedule of the same number and day shall be in effect over *any portion of* a division.

47. A.—No.

48. A.—The leaving time.

49. A.—Unless otherwise indicated it applies to the switch where an inferior train enters the siding; where there is no siding it applies to the place from which fixed signals are operated; where there is neither siding or fixed signals it

applies to the place where traffic is received or discharged.

50. A.—By figures in full-face type.

51. A.—Both are in full-faced type.

52. A.—The time at each end of the siding will be shown in full-faced type.

53. A.—“s.”

54. A.—“f.” Paragraph sign.

55. A.—“l” indicates leave and “a” indicates arrive.

Signal Rules

56. A.—Employees whose duties may require them to give signals.

57. A.—Yes.

58. A.—Flags of the prescribed color.

59. A.—Lamps of the prescribed color.

60. A.—From sunset to sunrise and whenever weather or other conditions obscure day signals.

61. A.—Night signals must be used.

Visible Signals

62. A.—Red.

63. A.—(The Standard Code does not designate this signal.)

64. A.—(The Standard Code does not designate this signal.)
65. A.—Flag stop.
66. A.—For the protection of workmen.

Hand, Flag, and Lamp Signals

67. A.—Swung across the track.
68. A.—Raised and lowered vertically.
69. A.—Swung vertically in a circle at half arm's length across the track when the train is standing.
70. A.—Swung vertically in a circle at arm's length across the track when the train is running.
71. A.—Swung horizontally above the head when the train is standing.
72. A.—The train should be stopped.

Audible Signals

73. A.—One short blast of the whistle.
74. A.—Two long blasts of the whistle.
75. A.—One long and three short blasts of the whistle.
76. A.—Four long blasts of the whistle.

- 77. A.—Five long blasts of the whistle.
- 78. A.—Three long blasts of the whistle.
- 79. A.—Two short blasts of the whistle.
- 80. A.—Three short blasts of the whistle.
- 81. A.—Four short blasts of the whistle.
- 82. A.—One long and two short blasts of the whistle.
- 83. A.—Two long and two short blasts of the whistle.
- 84. A.—One very long blast of the whistle.
- 85. A.—A succession of short sounds of the whistle.
- 86. A.—Stop.
- 87. A.—Proceed with caution and look out for stop signal.

Communicating Signals

- 88. A.—Start.
- 89. A.—Stop.
- 90. A.—Stop at next station.
- 91. A.—Back.
- 92. A.—Reduce speed.
- 93. A.—Apply or release air brakes.
- 94. A.—Increase speed.
- 95. A.—Call in flagman.

Train Signals

96. A.—The headlight.

97. A.—When a train turns out to meet another and has stopped clear of the main track, or is standing to meet trains at the end of double track or at junctions.

98. A.—The headlight to the front and rear by night. When not provided with a headlight at the rear two white lights must be displayed.

99. A.—No.

100. A.—By day green flags; by night green lights to the front and side and red lights to the rear.

101. A.—At the rear of the train.

102. A.—Green lights are displayed to the front, side, and rear.

103. A.—Two green flags and in addition two green lights by night.

104. A.—No.

105. A.—Two white flags and in addition two white lights by night.

106. A.—No.

107. A.—No.

108. A.—The same as though two were displayed.

109. A.—Yes.

110. A.—A white light must be displayed on the front of the leading car by night.

111. A.—Yes.

112. A.—For the protection of workmen, who are under or about an engine, car, or train.

113. A.—No.

114. A.—The workmen who placed the signal.

115. A.—Not unless the workmen who placed the signal are notified before cars are placed on the same track.

Use of Signals

117. A.—Such a signal will be regarded as a stop signal.

118. A.—As a stop signal.

119. A.—Yes.

120. A.—To stop a train at a flag station on its schedule.

121. A.—A station which is so indicated on the time-table.

122. A.—A red signal.

- 123. A.—No.
- 124. A.—Yes.
- 125. A.—When an engine is about to move.
- 126. A.—At all whistling posts.
- 127. A.—Until the crossing is passed.
- 128. A.—Only as prescribed by Rule.
- 129. A.—Only when necessary to stop train.

Superiority of Trains

- 130. A.—By right, class, or direction.
- 131. A.—By time-table.
- 132. A.—Right by direction is conferred by time-table and a train moving in the superior direction is superior to a train of the same class in the opposite direction.
- 133. A.—By train order.
- 134. A.—Train order.
- 135. A.—Right.
- 136. A.—To all other classes of trains.
- 137. A.—To third- and fourth-class trains and trains of other classes of less importance than the fourth class.
- 138. A.—Usually by foot-note on the time-table.
- 139. A.—Yes.

Movement of Trains

- 140. A.**—Until superseded.
- 141. A.**—By being used by one or more trains.
- 142. A.**—Only as authorized by train orders.
- 143. A.**—No.
- 144. A.**—Yes.
- 145. A.**—It must ascertain whether all trains due which are superior or of the same class have arrived or left.
- 146. A.**—By train register.
- 147. A.**—Yes.
- 148. A.**—Yes.
- 149. A.**—Proceed on its own schedule.
- 150. A.**—Yes.
- 151. A.**—Yes.
- 152. A.**—Yes.
- 153. A.**—Five minutes.
- 154. A.**—At the time a first-class train in the same direction is due to leave the next station in the rear where time is shown.
- 155. A.**—It must clear the time of opposing superior trains.

156. A.—Five minutes.

157. A.—It must be protected as prescribed by Rule 99.

158. A.—Yes.

159. A.—By train orders.

160. A.—Before the leaving time of a superior train.

161. A.—The extra in the inferior time-table direction.

162. A.—Yes.

163. A.—The train must back in, but must first be protected as directed by Rule 99.

164. A.—Five minutes.

165. A.—When the switch is not right or the track is not clear.

166. A.—Approach all sidings prepared to stop until the expected train is met.

167. A.—At the switch where the inferior train enters the siding.

168. A.—Because no provision has been made for the variation of watches.

169. A.—Not less than five minutes.

170. A.—When closing up at stations.

171. A.—No.

172. A.—No.

173. A.—Prepared to stop unless the main track is seen or known to be clear.

174. A.—See Rule 93.

175. A.—See Rule 93.

176. A.—Pass it if practicable and if necessary assume the schedule and take the train orders of the disabled train.

177. A.—No.

178. A.—Assume the right or schedule and take the train orders of the last train with which it has exchanged and proceed to and report from the next open telegraph office.

179. A.—The delayed train may, after proper consultation with the following train, precede it to the next telegraph station where it must report to the train dispatcher.

180. A.—It must be fully explained to them by the leading train that the expected train is following.

181. A.—Yes.

182. A.—Yes.

183. A.—No.

184. A.—If there is no other provision the conductor must arrange in writing with the operator, or if there be no operator, with the

switch-tender, or in the absence of both, with a flagman left there for that purpose, to notify all opposing inferior trains, or trains of the same class, leaving such point, that the section for which signals were displayed has not arrived.

185. A.—No.

186. A.—Prepared to stop.

187. A.—Yes.

188. A.—When a train stops or is delayed under circumstances in which it may be overtaken by another train.

189. A.—A sufficient distance to insure full protection.

190. A.—Yes.

191. A.—Place two torpedoes on the rail when the conditions require it.

192. A.—The same as the rear end.

193. A.—The next brakeman.

194. A.—Prevent damage to the detached portion if possible.

195. A.—The signal prescribed by Rule 12 (d) and 14 (f) must be given.

196. A.—No.

197. A.—A flagman must take a conspicuous position on the front of the leading car.

- 198. A.—No.
- 199. A.—In writing.
- 200. A.—In proper position.
- 201. A.—Conductors.
- 202. A.—No.
- 203. A.—Conductors and enginemen.
- 204. A.—Yes.
- 205. A.—The safe course must be taken.

Rules for Movement by Train Orders

- 206. A.—For those not provided for by timetable.
- 207. A.—Neither information nor instruction not essential to such movement.
- 208. A.—When applicable.
- 209. A.—Yes.
- 210. A.—Consecutively beginning at mid-night.
- 211. A.—Those who are to execute them.
- 212. A.—Yes.
- 213. A.—To the conductor and engineman and also to any one who acts as pilot.
- 214. A.—As if addressed to them.
- 215. A.—See Rule 205.

216. A.—As “No. 10,” or “2nd No. 10,” adding engine numbers if desired.

217. A.—By their engine numbers.

218. A.—“19” or “31.”

219. A.—Yes.

220. A.—It must be transmitted simultaneously to as many of them as practicable.

221. A.—Yes.

222. A.—Copies of the order must be delivered to all trains affected until all have arrived from one direction.

223. A.—Yes.

224. A.—Others must be traced from one of the copies first made.

225. A.—The conductor.

226. A.—No.

227. A.—The operator.

228. A.—See Rule 211.

229. A.—The train must first be stopped before delivery of the order is made.

230. A.—The operator may be instructed to give the “X” response.

231. A.—After the order has been repeated or the “X” response sent by the operator who receives the order for the superior train.

232. A.—As a holding order for the train addressed.

233. A.—As if it had not been sent.

234. A.—The lowest copy.

235. A.—The same as at any other office.

236. A.—To the conductor and engineman of the train, naming the point at which it is to receive the order, and in care of a certain person.

237. A.—When the signature of the person in whose care the order is addressed is received.

238. A.—He will deliver a copy of the order to the conductor and engineman of the train addressed, take their signature and leave the copy of the order showing such signatures with the operator at the first office accessible.

239. A.—As if “complete” had been given in the regular manner.

240. A.—Not until the signature of the conductor and engineman, of the train at the non-telegraph station, have been received.

241. A.—All sections are included.

242. A.—Yes.

243. A.—No.

244. A.—Not until he has obtained the signa-

tures of the conductor and engineman to the order.

245. A.—Until fulfilled, superseded, or annulled.

246. A.—Yes.

247. A.—Yes.

248. A.—When such train loses both right and schedule as prescribed by Rules 4 and 82 or is annulled.

249. A.—Yes.

250. A.—See Rule 221 A and 221 B.

251. A.—See Rule 221 A and 221 B.

252. A.—Promptly record and report to the train dispatcher the time of all trains.

253. A.—See Rule 223.

Forms of Train Orders

254. A.—Fixing meeting points for opposing trains.

255. A.—Trains receiving these orders will run with respect to each other to the designated point and there meet in the manner provided by the rule.

256. A.—Directing a train to pass or run ahead of another train.

257. A.—Both trains will run according to rule to the designated point and there arrange for the rear train to pass promptly.

258. A.—Right is conferred to run ahead of the train passed from the designated point.

259. A.—Giving right to a train over an opposing train.

260. A.—Right over the second named train, between the points mentioned.

261. A.—The first named train.

262. A.—It may proceed, keeping clear of the opposing train as many minutes as such train was before required to clear it under the Rules.

263. A.—Time orders.

264. A.—As if its schedule time was as much later as the time stated in the order.

265. A.—Opposing trains receiving the order are required to run with respect to this later time as before required to run with respect to the regular schedule time.

266. A.—The first named train must not pass the designated point before the time given unless the other train has arrived.

267. A.—It will run with respect to the time specified at the designated point or any inter-

mediate station where schedule time is earlier than the time specified in the order as before required to run with respect to the schedule time.

268. A.—As though such time was the regular schedule time for the trains named at that station.

269. A.—Other trains are required to run with respect to the time specified at the designated point or any intermediate station where schedule time is earlier than the time specified in the order, as before required to run with respect to the schedule time of the train or trains named.

270. A.—Yes.

271. A.—For sections.

272. A.—Example 1.

273. A.—Example 2.

274. A.—Example 5.

275. A.—Example 6.

276. A.—Example 7.

277. A.—Example 8.

278. A.—Example 9.

279. A.—Form K.

280. A.—For extra trains.

281. A.—The extra must go to the second

point named in the order before returning to the third point named in the order.

282. A.—For work trains.

283. A.—Must protect whether standing or moving.

284. A.—Yes.

285. A.—Example 4.

286. A.—It will not enter the limits before the time stated.

287. A.—Example 5.

288. A.—Yes.

289. A.—Yes.

290. A.—It will proceed expecting to find the work extra protecting.

291. A.—It can proceed only under protection of flag.

292. A.—For holding order.

293. A.—When the hold order is annulled, or an order is given to the operator in the form “— may go.”

294. A.—Annulling a schedule or a section.

295. A.—No.

296. A.—Annulling an order.

297. A.—No.

298. A.—Yes.

299. A.—Annulling part of an order.

300. A.—Superseding an order or part of an order.

301. A.—By adding to prescribed forms the words: “instead of ——.”

STANDARD CODE

OF THE

AMERICAN RAILWAY ASSOCIATION

Adopted April 25th, 1906.

(FOR SINGLE TRACK)

GENERAL RULES

A. Employees whose duties are prescribed by these rules must provide themselves with a copy.

B. Employees must be conversant with and obey the rules and special instructions. If in doubt as to their meaning they must apply to proper authority for an explanation.

C. Employees must pass the required examinations.

D. Persons employed in any service on trains are subject to the rules and special instructions.

E. Employees must render every assistance in their power in carrying out the rules and special instructions.

F. Any violation of the rules or special instructions must be reported.

G. The use of intoxicants by employees while on duty is prohibited. Their use, or the frequenting of places where they are sold, is sufficient cause for dismissal.

H. The use of tobacco by employees while on duty in or about passenger stations, or on passenger cars, is prohibited.

J. Employees on duty must wear the prescribed badge and uniform and be neat in appearance.

K. Persons authorized to transact business at stations or on trains must be orderly and avoid annoyance to patrons.

L. In case of danger to the Company's property employees must unite to protect it.

DEFINITIONS

ENGINE.—A locomotive propelled by any form of energy.

TRAIN.—An engine, or more than one engine coupled, with or without cars, displaying Markers.

REGULAR TRAIN.—A train authorized by a timetable schedule.

SECTION.—One of two or more trains running on the same schedule displaying signals or for which signals are displayed.

EXTRA TRAIN.—A train not authorized by a timetable schedule. It may be designated as:

Extra.—For any extra train, except work extra;

Work extra.—for work train extra.

SUPERIOR TRAIN.—A train having precedence over another train.

TRAIN OF SUPERIOR RIGHT.—A train given precedence by train order.

TRAIN OF SUPERIOR CLASS.—A train given precedence by time-table.

TRAIN OF SUPERIOR DIRECTION.—A train given precedence in the direction specified in the time-table as between trains of the same class.

NOTE.—Superiority by direction is limited to single track.

TIME-TABLE.—The authority for the movement of regular trains subject to the rules. It contains the classified schedules of trains with special instructions relating thereto.

SCHEDULE.—That part of a time-table which prescribes class, direction, number, and movement for a regular train.

DIVISION.—That portion of a railway assigned to the supervision of a ———.*

SUBDIVISION.—A part of a division so designated on the time-table.

MAIN TRACK.—A track extending through yards and between stations, upon which trains are operated by time-table or train order, or the use of which is controlled by block signals.

SINGLE TRACK.—A main track upon which trains are operated in both directions.

DOUBLE TRACK.—Two main tracks, upon one of which the current traffic is in a specified direction, and upon the other in the opposite direction.

THREE (or more) TRACKS.—Three (or more) main

* The blank may be filled in by each road to suit its own organization.

cks, upon any of which the current of traffic may in either specified direction.

CURRENT OF TRAFFIC.—The movement of trains on main track, in one direction, specified by the rules.

STATION.—A place designated on the time-table by one, at which a train may stop for traffic; or to enter or leave the main track; or from which fixed signals are operated.

SIDING.—A track auxiliary to the main track for meeting or passing trains, limited to the distance between two adjoining telegraph stations.

FIXED SIGNAL.—A signal of fixed location indicating a condition affecting the movement of a train.

NOTE TO DEFINITION OF FIXED SIGNALS.—The definition of a "Fixed Signal" covers such signals as advance boards, stop boards, yard limits, switch, train order, block, interlocking, semaphore, disc, ball, or other means for indicating stop, caution, or proceed.

YARD.—A system of tracks within defined limits provided for the making up of trains, storing of cars, and other purposes, over which movements not authorized by time-table, or by train orders, may be made, subject to prescribed signals and regulations.

YARD ENGINE.—An engine assigned to yard service and working within yard limits.

PILOT.—A person assigned to a train when the engineer or conductor or both are not fully acquainted with the physical characteristics or running rules of a road, or portion of the road, over which the train is to be moved.

RULES FOR SINGLE TRACK. STANDARD TIME

1. Standard Time obtained from ——— observatory will be telegraphed to all points from designated offices at ———, ——— m. daily.

NOTE TO RULE 1.—In order to detect possible errors at junction points and to secure uniformity, the Committee recommends that the time be disseminated to all points at the same hour. The Committee considers it of great importance that the time be obtained from some observatory of recognized standing.

2. Watches that have been examined and certified to by a designated inspector must be used by conductors, enginemen, and ———.* The certificate in prescribed form must be renewed and filed with ——— every ———.

(Form of Certificate.)

Certificate of Watch Inspector

This is to certify that on.....19.....
the watch of.....
employed as.....
on the.....
was examined by me. It is correct and reliable, and
in my judgment will, with proper care, run within a
variation of thirty seconds per week.

* The Committee recommends that in filling the blanks each company add such other classes of employees as it may desire.

Name of Maker.....
 Brand.....
 Number of Movement.....
 Open or Hunting Case.....
 Metal of Case.....
 Stem or Key Winding.....
 Signed,

Inspector.

Address.....

3. Watches of conductors, enginemen, and — * must be compared before starting on each trip, with a clock designated as a Standard Clock. The time when watches are compared must be registered on a prescribed form.

NOTE TO RULE 3.—The conditions under which conductors and enginemen whose duties preclude access to a standard clock are required to obtain standard time, vary so much on different roads that the Committee recommends that each adopt such regulations to cover the case supplementary to this rule, as may best suit its own requirements.

TIME-TABLES

4. Each time-table, from the moment it takes effect, supersedes the preceding time-table, and its schedules take effect on any division (or sub-division) at the

* The Committee recommends that in filling the blank each company add such other classes of employees as it may desire.

leaving time at their initial stations on such division (or sub-division). But when a schedule of the preceding time-table corresponds in number, class, day of leaving, direction, and initial and terminal stations with a schedule of the new time-table, a train authorized by the preceding time-table will retain its train orders and assume the schedule of the corresponding number of the new time-table.

Schedules on each division (or sub-division), date from their initial stations on such division (or sub-division).

Not more than one schedule of the same number and day shall be in effect on any division (or sub-division).

5. Not more than two times are given for a train at any station; where one is given, it is, unless otherwise indicated, the leaving time; where two, they are the arriving and the leaving time.

Unless otherwise indicated, the time applies to the switch where an inferior train enters the siding; where there is no siding it applies to the place from which fixed signals are operated; where there is neither siding or fixed signal, it applies to the place where traffic is received or discharged.

Schedule meeting or passing stations are indicated by figures in full-faced type.

Both the arriving and leaving time of a train are in full-faced type when both are meeting or passing times, or when one or more trains are to meet or pass it between those times.

When trains are to be met or passed at a siding extending between two adjoining stations, the time

at each end of the siding will be shown in full-faced type.

Where there are one or more trains to meet or pass a train between two times, or more than one train to meet a train at any station, attention is called to it by ____.

NOTE TO RULE 5.—The Committee recommends that each company adopt such method as it may prefer in filling the blank.

6. The following signs when placed before the figures of the schedule, indicate:

“s”—regular stop;

“f”—flag stop to receive or discharge passengers or freight;

“¶”—stop for meals.

“L”—Leave.

“A”—Arrive.

SIGNAL RULES

7. Employees whose duties may require them to give signals must provide themselves with the proper appliances, keep them in good order and ready for immediate use.

8. Flags of the prescribed color must be used by day and lamps of the prescribed color by night.

9. Night signals are to be displayed from sunset to sunrise. When weather or other conditions obscure day signals, night signals must be used in addition.

Visible Signals

10. COLOR SIGNALS.

*Color.**Indication.*

- (a) Red.....Stop.
- (b) —.....Proceed, and for other uses prescribed by the rules.
- (c) —.....Proceed with caution, and for other uses prescribed by the Rules.
- (d) Green and whiteFlag stop. See Rule 28.
- (e) Blue.....See Rule 26.

NOTE TO RULE 10.—The Committee has omitted giving the colors of signals “b” and “c” in Rule 10, leaving it discretionary with each road to use such colors as it may prefer.

11. A fusee on or near the track burning red must not be passed until burned out. When burning green it is a caution signal.

12. HAND, FLAG, AND LAMP SIGNALS.

*Manner of Using.**Indication.*

- (a) Swung across the trackStop.
- (b) Raised and lowered vertically.....Proceed.
- (c) Swung vertically in a circle at half-arm's length across the track when the train is standing.....Back.

Manner of Using. *Indication.*

- (d) Swung vertically in a circle at arm's length across the track, when the train is running.....Train has parted.
- (e) Swung horizontally above the head when the train is standing.....Apply air brakes.
- (f) Held at arm's length above the head when the train is standingRelease air brakes.
13. Any object waved violently by anyone on or near the track is a signal to stop.

Audible Signals

14. ENGINE WHISTLE SIGNALS.

NOTE.—The signals prescribed are illustrated by “o” for short sounds; “—” for longer sounds. The sound of the whistle should be distinct, with intensity and duration proportionate to the distance signal is to be conveyed.

Sound.

Indication.

- (a) o.....Stop. Apply brakes.
- (b) — —Release brakes.
- (c) — o o oFlagman go back and protect rear of train.
- (d) — — — —Flagman return from west or south.
- (e) — — — — —Flagman return from east or north.

*Sound.**Indication.*

- (f) — — — When running, train parted; to be repeated until answered by the signal prescribed by Rule 12 (d). Answer to 12 (d).
- (g) o o Answer to any signal not otherwise provided for.
- (h) o o o When train is standing, back. Answer to 12 (c) and 16 (c). When train is running, answer to 16 (d).
- (j) o o o o Call for signals.
- (k) — o o To call the attention of yard engines, extra trains or trains of the same or inferior class or inferior right to signals displayed for a following section.
- (l) — — o o Approaching public crossings at grade.
- (m) ————— Approaching stations, junctions and railroad crossings at grade.

A succession of short sounds of the whistle is an alarm for persons or cattle on the track.

15. The explosion of one torpedo is a signal to stop; the explosion of two not more than 200 feet apart is a signal to reduce speed, and look out for a stop signal.

16. Communicating Signals

<i>Sound.</i>	<i>Indication.</i>
(a) Two.....	When train is standing, start.
(b) Two	When train is running, stop at once.
(c) Three	When train is standing, back the train.
(d) Three.....	When train is running, stop at next station.
(e) Four	When train is standing, apply or release air brakes.
(f) Four.....	When train is running, reduce speed.
(g) Five.....	When train is standing, call in flagman.
(h) Five.....	When train is running, increase speed.

Train Signals

17. The head-light will be displayed to the front of every train by night, but must be concealed when a train turns out to meet another and has stopped clear of main track, or is standing to meet trains at the end of double track or at junctions.

18. Yard engines will display the head-light to the front and rear by night. When not provided with a head-light at the rear, two white lights must be displayed. Yard engines will not display markers.

19. The following signals will be displayed, one on

each side of the rear of every train, as markers, to indicate the rear of the train:

By day, green flags; by night, green lights to the front and side and red lights to the rear; except when the train is clear of the main track, when green lights must be displayed to the front, side, and rear.

20. All sections except the last will display two green flags, and in addition, two green lights by night, in the places provided for that purpose on the front of the engine.

21. Extra trains will display two white flags and in addition, two white lights by night, in the places provided for that purpose on the front of the engine.

22. When two or more engines are coupled, the leading engine only shall display the signals as prescribed by Rules 20 and 21.

23. One flag or light displayed where in Rules 19, 20, and 21 two are prescribed will indicate the same as two; but the proper display of all train signals is required.

24. When cars are pushed by an engine (except when shifting or making up trains in yards), a white light must be displayed on the front of the leading car by night.

25. Each car on a passenger train must be connected with the engine by a communicating signal appliance.

26. A blue flag by day and a blue light by night, displayed at one or both ends of an engine, car, or train, indicates that workmen are under or about it. When thus protected it must not be coupled to or moved. Workmen will display the blue signals and

the same workmen are alone authorized to remove them. Other cars must not be placed on the same track, so as to intercept the view of the blue signals, without first notifying the workmen.

Use of Signals

27. A signal imperfectly displayed, or the absence of a signal at a place where a signal is usually shown, must be regarded as a stop signal, and the fact reported to the _____.

28. A combined green and white signal is to be used to stop a train only at the flag stations indicated on its schedule. When it is necessary to stop a train at a point that is not a flag station on its schedule, a red signal must be used.

29. When a signal (except a fixed signal) is given to stop a train, it must, unless otherwise provided, be acknowledged as prescribed by Rule 14 (g) or (h).

30. The engine-bell must be rung when an engine is about to move.

31. The engine-bell must be rung on approaching every public road crossing at grade, and until it is passed; and the whistle must be sounded at all whistling-posts.

32. The unnecessary use of either the whistle or the bell is prohibited. They will be used only as prescribed by rule or law, or to prevent accident.

33. Watchmen stationed at public road and street crossings must use red signals only when necessary to stop trains.

Superiority of Trains

71. A train is superior to another train by right, class, or direction. Right is conferred by train order; class, and direction by time-table.

Right is superior to class or direction.

Direction is superior as between trains of the same class.

72. Trains of the first class are superior to those of the second; trains of the second class are superior to those of the third; and so on.

Trains in the direction specified by the time-table are superior to trains of the same class in the opposite direction.

73. Extra trains are inferior to regular trains.

Movement of Trains

82. Time-table schedules, unless fulfilled, are in effect for 12 hours after their time at each station.

Regular trains 12 hours behind either their schedule arriving or leaving time at any station lose both right and schedule, and can thereafter proceed only as authorized by train order.

83. A train must not leave its initial station on any division (or sub-division); or a junction, or pass from double to single track, until it has been ascertained whether all trains due, which are superior or of the same class, have arrived or left.

84. A train must not start until the proper signal is given.

85. When a train of one schedule is on the time of

another schedule of the same class in the same direction, it will proceed on its own schedule.

Trains of one schedule may pass trains of another schedule of the same class, and extras may pass and run ahead of extras.

86. An inferior train must clear the time of a superior train in the same direction, not less than five minutes; but must be clear at the time a first-class train, in the same direction, is due to leave the next station in the rear where time is shown.

87. An inferior train must keep out of the way of opposing superior trains and failing to clear the main track by the time required by rule must be protected as prescribed by Rule 99.

Extra trains must clear the time of regular trains — minutes unless otherwise provided, and will be governed by train orders with respect to opposing extra trains.

88. At meeting points between trains of the same class, the inferior train must clear the main track before the leaving time of the superior train.

At meeting points between extra trains, the train in the inferior time-table direction must take the siding unless otherwise provided.

Trains must pull into the siding when practicable; if necessary to back in the train must first be protected as prescribed by Rule 99, unless otherwise provided.

89. At meeting points between trains of different classes the inferior train must take the siding and clear the superior train at least five minutes, and must pull into the siding when practicable. If necessary to

back in the train must first be protected as prescribed by Rule 99, unless otherwise provided.

NOTE TO RULES 88 AND 89.—The Committee recommends that where greater clearance is necessary, Rule 88 should require a clearance of FIVE minutes, and Rule 89 of TEN minutes.

90. Trains must stop at schedule meeting stations, if the train to be met is of the same class, unless the switch is right and the track clear.

When the expected train of the same class is not found at the schedule meeting station, the superior train must approach all sidings prepared to stop, until the expected train is met.

Trains must stop clear of the switch used by the train to be met in going on the siding.

91. Unless some form of block signals is used, trains in the same direction must keep at least five minutes apart, except in closing up at stations.

NOTE TO RULE 91.—The Committee recommends, that where greater clearance is necessary, Rule No. 91 should allow a clearance of TEN minutes or more.

92. A train must not arrive at a station in advance of its schedule arriving time.

A train must not leave a station in advance of its schedule leaving time.

93. Within yard limits the main track may be used, protecting against ——— class trains. ——— class and extra trains must move within yard limits, prepared to stop unless the main track is seen or known to be clear.

94. A train which overtakes another train so disabled that it cannot proceed will pass it, if practicable,

and if necessary will assume the schedule and take the train orders of the disabled train, proceed to the next open telegraph office, and there report to the ———. The disabled train will assume the right or schedule and take the train orders of the last train with which it has exchanged, and will when able, proceed to and report from the next open telegraph office.

When a train unable to proceed against the right or schedule of an opposing train, is overtaken between telegraph stations by an inferior train or a train of the same class having right or schedule which permits it to proceed, the delayed train may, after proper consultation with the following train, precede it to the next telegraph station, where it must report to ———.

When opposing trains are met under these circumstances, it must be fully explained to them by the leading train that the expected train is following.

95. Two or more sections may be run on the same schedule.

Each section has equal time-table authority.

A train must not display signals for a following section without orders from the ———.

96. When signals displayed for a section are taken down at any point before that section arrives, the conductor will, if there be no other provision, arrange in writing with the operator, or if there be no operator, with the switchtender, or in the absence of both, with a flagman left there for that purpose, to notify all opposing inferior trains or trains of the same class leaving such point, that the section for which signals were displayed has not arrived.

NOTE TO RULE 96.—The Committee recommends, if a company desires to have all opposing trains notified, that the last sentence of Rule 96 be changed to read: "To notify all opposing trains that the section for which signals were displayed has not arrived."

97. Extra trains must not be run without orders from the ———.

98. Trains must approach the end of double track, junctions, railroad crossings at grade, and drawbridges, prepared to stop, unless the switches and signals are right and the track is clear. Where required by law, trains must stop.

99. When a train stops or is delayed, under circumstances in which it may be overtaken by another train, the flagman must go back immediately with stop signals a sufficient distance to insure full protection. When recalled he may return to his train, first placing two torpedoes on the rail when the conditions require it.

The front of a train must be protected in the same way, when necessary, by the ———.

100. When the flagman goes back to protect the rear of his train, the ——— must, in the case of passenger trains, and the next brakeman in the case of other trains, take his place on the train.

101. If a train should part while in motion, trainmen must, if possible, prevent damage to the detached portion. The signals prescribed by rules 12 (d) and 14 (f) must be given.

The detached portion must not be moved or passed until the front portion comes back.

102. When cars are pushed by an engine (except

when shifting and making up trains in yards) a flagman must take a conspicuous position on the front of the leading car.

103. Messages or orders respecting the movement of trains or the condition of track or bridges must be in writing.

104. Switches must be left in proper position after having been used. Conductors are responsible for the position of the switches used by them and their trainmen, except where switchtenders are stationed.

A switch must not be left open for a following train unless in charge of a trainman of such train.

105. Both conductors and enginemen are responsible for the safety of their trains and, under conditions not provided for by the rules, must take every precaution for their protection.

106. In all cases of doubt or uncertainty the safe course must be taken and no risks run.

Rules for Movement by Train Orders

201. For movements not provided for by timetables, train orders will be issued by authority and over the signature of the ———. They must contain neither information nor instruction not essential to such movements.

They must be brief and clear; in the prescribed forms when applicable; and without erasure, alteration or interlineation.

202. Each train order must be given in the same words to all persons or trains addressed.

203. Train orders will be numbered consecutively each day, beginning with No. — at midnight.

204. Train orders must be addressed to those who are to execute them, naming the place at which each is to receive his copy. Those for a train must be addressed to the conductor and engineman, and also to anyone who acts as its pilot. A copy for each person addressed must be supplied by the operator.

Orders addressed to operators restricting the movement of trains must be respected by conductors and enginemen the same as if addressed to them.

205. Each train order must be written in full in a book provided for the purpose at the office of the ———; and with it recorded the names of those who have signed for the order; the time and the signals which show when and from what offices the order was repeated and the responses transmitted; and the train dispatcher's initials. These records must be made at once, and never from memory or memoranda.

206. Regular trains will be designated in train orders by their numbers as "No. 10" or "2d No. 10," adding engine numbers if desired. Extra trains will be designated by engine numbers and the direction, as, Extra 798 "East" or "West." Other numbers and time will be stated in figures only.

207. To transmit a train order, the signal "31" or the signal "19," followed by the direction, must be given to each office addressed, the number of copies being stated, if more or less than three—thus, "31 West copy 5," or "19 East copy 2."

NOTE TO RULE 207.—Where forms "31" and "19" are not both in use the signal may be omitted.

208 (A).—A train order to be sent to two or more offices must be transmitted simultaneously to as many of them as practicable. The several addresses must be in order of superiority of trains, each office taking its proper address. When not sent simultaneously to all, the order must be sent first to the superior train.

208 (B).—A train order to be sent to two or more offices must be transmitted simultaneously to as many of them as practicable. -

The several addresses must be in the order of superiority of trains and when practicable must include the operator at the meeting or waiting point, each office taking its proper address.

When not sent simultaneously to all, the order must be sent first to the superior train.

Copies of the order addressed to the operator at the meeting or waiting point must be delivered to all trains affected until all have arrived from one direction.

209. Operators receiving train orders must write them in manifold during transmission, and if they cannot at one writing make the requisite number of copies, must trace others from one of the copies first made.

NOTE TO RULE 209.—If the typewriter is used for copying train orders, when additional copies are made, the order must be repeated from such copies to the train dispatcher and "complete" given in the usual manner.

210. When a "31" train order has been transmitted, operators must (unless otherwise directed) repeat it at once from the manifold copy in the succession in which the several offices have been addressed, and

then write the time of the repetition on the order. Each operator receiving the order should observe whether the others repeat correctly.

Those to whom the order is addressed, except enginemen, must then sign it, and the operator will send their signatures preceded by the number of the order to the ———. The response "complete," and the time, with the initials of the ———, will then be given by the train dispatcher. Each operator receiving this response will then write on each copy the word "complete," the time, and his last name in full, and then deliver a copy to each person addressed, except enginemen. The copy for each engineman must be delivered to him personally by ———.

. NOTE TO RULE 210.—The blanks in the above rule may be filled for each road to suit its own requirements. On roads where the signature of the engineman is desired, the words "except engineman," and the last sentence in the second paragraph may be omitted. If preferred, each person receiving an order may be required to read it aloud to the operator.

211. When a "19" train order has been transmitted, operators must (unless otherwise directed) repeat it at once from the manifold copy, in the succession in which the several offices have been addressed. Each operator receiving the order should observe whether the others repeat correctly. When the order has been repeated correctly by an operator, the response "complete," and the time with the initials of the ———, will be given by the train dispatcher. The operator receiving this response will

then write on each copy the word "complete," the time, and his last name in full, and personally deliver a copy to each person addressed without taking his signature. But when delivery to enginemen will take the operator from the immediate vicinity of his office, the engineman's copy will be delivered by _____.

When a "19" train order restricting the superiority of a train is issued for it at the point where such superiority is restricted, the train must be brought to a stop before delivery of the orders.

212. A train order may, when so directed by the train dispatcher, be acknowledged without repeating, by the operator responding "X— (number of train order) to — (train number)" with the operator's initials and office signal. The operator must then write on the order his initials and the time.

213. "Complete" must not be given to a train order for delivery to an inferior train until the order has been repeated or the "X" response sent by the operator who receives the order for the superior train.

214. When a train order has been repeated or "X" response sent, and before "complete" has been given, the order must be treated as a holding order for the train addressed, but must not be otherwise acted on until "complete" has been given.

If the line fails before an office has repeated an order or has sent the "X" response, the order at that office is of no effect and must be there treated as if it had not been sent.

215. The operator who receives and delivers a train order must preserve the lowest copy.

216. For train orders delivered by the train dispatcher the requirements as to the record and delivery are the same as at other offices.

217. A train order to be delivered to a train at a point not a telegraph station, or at one at which the telegraph office is closed, must be addressed to:

"C. and E.—— (at ——), care of ——." and forwarded and delivered by the conductor or other person in whose care it is addressed. When form 31 is used "complete" will be given upon the signature of the person by whom the order is to be delivered, who must be supplied with copies for the conductor and engineman addressed, and a copy upon which he shall take their signatures. This copy he must deliver to the first operator accessible, who must preserve it, and at once transmit the signatures of the conductor and engineman to the train dispatcher.

Orders so delivered must be acted on as if "complete" had been given in the usual way.

For orders which are sent, in the manner herein provided, to a train, the superiority of which is thereby restricted, "complete" must not be given to an inferior train until the signatures of the conductor and engineman of the superior train have been sent to the——.

218. When a train is named in a train order by its schedule number alone, all sections of that schedule are included, and each must have copies delivered to it.

219. Unless otherwise directed, an operator must not repeat or give the "X" response to a train order for a train which has been cleared or of which the

engine has passed his train order signal until he has obtained the signatures of the conductor and engine-man to the order.

220. Train orders once in effect continue so until fulfilled, superseded, or annulled. Any part of an order specifying a particular movement may be either superseded or annulled.

Orders held by or issued for or any part of an order relating to a regular train become void when such train loses both right and schedule as prescribed by Rules 4 and 82; or is annulled.

221 (A). A fixed signal must be used at each train-order office, which shall indicate "stop" when there is an operator on duty, except when changed to "proceed" to allow a train to pass after getting train orders, or for which there are no orders. A train must not pass the signal while "stop" is indicated. The signal must be returned to "stop" as soon as a train has passed. It must be fastened at "proceed" only when no operator is on duty.

Operators must have the proper appliances for hand signaling ready for immediate use if the fixed signal should fail to work properly. If a signal is not displayed at a night office, trains which have not been notified must stop and ascertain the cause and report the facts to the — from the next open telegraph office.

Where the semaphore is used, the arm indicates "stop" when horizontal and "proceed" when in an inclined position.

NOTE TO RULE 221 A.—The conditions which affect trains at stations vary so much that it is recommended

each road adopt such regulations supplementary to this rule as may best suit its own requirements.

221 (B). A fixed signal must be used at each train-order office, which shall indicate "stop" when trains are to be stopped for train orders. When there are no orders the signal must indicate "proceed."

When an operator receives the signal "31" or "19," followed by the direction, he must immediately display the "stop signal" for the direction indicated and then reply "stop displayed"; adding the direction; and until the orders have been delivered or annulled the signal must not be restored to "proceed." While "stop" is indicated trains must not proceed without a clearance card. (Form —— [A].)

Operators must have proper appliances for hand signaling ready for immediate use if the fixed signal should fail to work properly. If a signal is not displayed at a night office, trains which have not been notified must stop and ascertain the cause, and report the facts to the —— from the next open telegraph office.

Where the semaphore is used, the arm indicates "stop" when horizontal and "proceed" when in an inclined position.

NOTES TO RULES 221 A AND 221 B.—The Committee has recommended two forms of Rule 221, leaving it discretionary to adopt one or both of these forms according to the circumstances of the traffic.

222. Operators will promptly record and report to the —— the time of departure of all trains and the direction of extra trains. They will record the time of arrival of trains and report it when so directed.

223. The following signs and abbreviations may be used:

Initials for signature of the ———.

Such office and other signals as are arranged by the ———.

C & E—for Conductor and Engineman.

X●—Train will be held until order is made “complete.”

Com—for Complete.

O S—Train Report.

No—for Number.

Eng—for Engine.

Sec—for Section.

Psgr—for Passenger.

Frt—for Freight.

Mins—for Minutes.

Jct—for Junction.

Dispr—for Train Dispatcher.

Opr—for Operator.

31 or 19—to clear the line for Train Orders, and for operators to ask for Train Orders.

S D—for “Stop Displayed.”

The usual abbreviations for the names of the months and stations.

GENERAL NOTE.—Blanks in the rules may be filled by each road to suit its own organization or requirements.

FORMS OF TRAIN ORDERS

Form A.—Fixing Meeting Points for Opposing Trains

- (1) _____ meet _____ at _____.
- (2) _____ meet _____ at _____ at _____
(and so on).

Examples

- (1) No. 1 meet No. 2 at "B."
 No. 3 meet 2d No. 4 at "B."
 No. 5 meet Extra 95 east at "B."
 Extra 652 north meet extra 231 south at "B."
 (2) No. 2 and 2d No. 4 meet Nos. 1 and 3 at "C"
 and Extra 95 west at "D."
 No. 1 meet No. 2 at "B," 2d No. 4 at "C" and
 Extra 95 east at "D."

Trains receiving these orders will run with respect to each other to the designated points and there meet in the manner provided by the Rules.

Form B.—Directing a Train to Pass or Run Ahead of Another Train

- (1) _____ pass _____ at _____.
- (2) _____ pass _____ when overtaken.
- (3) _____ run ahead of _____ to _____.
- (4) _____ run ahead of _____ until overtaken.
- (5) _____ pass _____ at _____ and run ahead of _____ to _____.

Examples

- (1) No. 1 pass No. 3 at "K."
- (2) No. 6 pass No. 4 when overtaken.
- (3) Extra 594 east run ahead of No. 6 "M" to "B."
- (4) Extra 95 west run ahead of No. 3 "B" until overtaken.
- (5) No. 1 pass No. 3 at "K" and run ahead of No. 7 "M" to "Z."

When under (1) a train is to pass another both trains will run according to rule to the designated point and there arrange for the rear train to pass promptly.

Under (2), both trains will run according to rule until the second-named train is overtaken and then arrange for the rear train to pass promptly.

Under (3), the second-named train must not exceed the speed of the first-named train between the points designated.

Under (4), the first-named train will run ahead of the second-named train from the designated station until overtaken, and then arrange for the rear train to pass promptly.

When an inferior train receives an order to pass a superior train, right is conferred to run ahead of the train passed from the designated point.

Form C.—Giving Right to a Train Over an Opposing Train

_____ has right over _____ to _____.

Examples

(1) No. 1 has right over No. 2 "G" to "X."

(2) Extra 37 east has right over No. 3 "F" to "A."

This order gives right to the train first named over the other train between the points named.

If the trains meet at either of the designated points, the first-named train must take the siding, unless the order otherwise prescribes.

Under (1), if the second-named train reach the point last named before the other arrives, it may proceed, keeping clear of the opposing train as many minutes as such train was before required to clear it under the Rules.

Under (2), the regular train must not go beyond the point last named until the extra train has arrived, unless directed by train order to do so.

Form E.—Time Orders

- (1) _____ run _____ late _____ to _____.
- (2) _____ run _____ late _____ to _____ and
 _____ late _____ to _____, etc.
- (3) _____ wait at _____ until _____ for _____.
- (4) _____ wait at _____ until _____.
- _____ until _____.
- _____ until _____.
- _____ until _____.

Examples

(1) No. 1 run 20 mins. late "A" to "G."

(2) No. 1 run 20 mins. late "A" to "G" and 15 mins. late "G" to "K," etc.

(3) No. 1 wait at "H" until 10:00 A.M. for No. 2.

(4) Nos. 1 and 3 wait at "N" until 10:00 A.M.

"P" until 10:30 A.M.

"R" until 10:55 A.M., etc.

(1) and (2) make the schedule time of the train named, between the stations mentioned, as much later as stated in the order, and any other train receiving the order is required to run with respect to this later time, as before required to run with respect to the regular schedule time. The time in the order should be such as can be easily added to the schedule time.

Under (3), the train first-named must not pass the designated point before the time given, unless the other train has arrived. The train last named is required to run with respect to the time specified, at the designated point or any intermediate station where schedule time is earlier than the time specified in the order, as before required to run with respect to the schedule time of the train first-named.

Under (4), the train (or trains), named must not pass the designated points before the times given.

Other trains receiving the order are required to run with respect to the time specified at the designated points or any intermediate station where schedule time is earlier than the time specified in the order as before required to run with respect to the schedule time of the train (or trains), named.

All of these examples may be used in connection with an extra train created by example (3) of Form G and the times at each point stated in that example have the same meaning as schedule times in the foregoing examples.

Form F.—For Sections

- (1) _____ display signals and run as _____ to _____.
- (2) _____ run as _____ to _____.
- (3) _____ display signals _____ to _____ for _____.
- (6) _____ is withdrawn as _____ at _____.
- (7) _____ instead of _____ display signals and run as _____ to _____.
- (8) _____ take down signals at _____.
- (9) _____ and _____ reverse positions as _____ and _____ to _____.

Examples

(1) Eng. 20 display signals and run as 1st No. 1 "A" to "Z."

(2) Eng. 25 run as 2d No. 1 "A" to "Z."

(3) No. 1 display signals "A" to "G" for Eng. 65. 2d No. 1 display signals "B" to "E" for Eng. 99.

These examples may be modified as follows:

(4) Eng. 20, 25 and 99 run as 1st, 2d and 3d No. 1 "A" to "Z."

Example (1) is to be used when the number of the engine for which signals are displayed is unknown and is to be followed by example (2), both being single order examples.

Under examples (2) and (3) the engine named will not display signals.

Under example (4) the engine last named will not display signals.

For changing sections:

To add an intermediate section the following modification of example (1) will be used:

(5) Eng. 85 display signals and run as 2d No. 1 "N" to "Z." Following sections change numbers accordingly.

Under (5) Engine 85 will display signals and run as directed and following sections will take the next higher number.

To drop an intermediate section, the following example will be used:

(6) Eng. 85 is withdrawn as 2d No. 1 at "H." Following sections change numbers accordingly.

Under (6) Engine 85 will drop out at "H" and following sections will take the next lower number.

To substitute one engine for another on a section, the following will be used:

(7) Eng. 18 instead of Eng. 85 display signals and run as 2d No. 1 "R" to "Z."

Under (7) Eng. 85 will drop out at "R" and Engine 18 will run as directed.

If Engine 85 is last section the words "display signals and" will be omitted. Following sections need not be addressed.

To discontinue the display of signals the following example will be used:

(8) 2d No. 1 take down signals at "D."

Under example (8) 2d No. 1 will take down signals as directed and a following section must not proceed beyond the point named.

To pass one section by another, the following will be used:

(9) Engs. 99 and 25 reverse positions as 2d and 3d

No. 1 "H" to "Z." Under (9) Engine 99 will run ahead of Engine 25 "H" to "Z," and, if necessary, both engines will arrange signals accordingly. Following sections, if any, need not be addressed.

The character of a train for which signals are displayed may be stated. Each section affected by the order must have copies, and must arrange signals accordingly.

To annul a section for which signals have been displayed over a division or any part thereof, when no train is to follow the signals, Form K must be used.

Form G.—Extra Trains

(1) Eng. — run extra — to —.

(2) Eng. — run extra — to — and return to —.

Examples

(1) Eng. 99 run extra "A" to "F."

(2) Eng. 99 run extra "A" to "F" and return to "C."

Under (2) the extra must go to "F" before returning to "C."

(3) Eng. — run extra leaving — on — as follows with right over all trains:

Leave —.

" —.

Arrive —.

Example

(3) Eng. 77 run extra leaving "A" on Thursday, Feb. 17th, as follows, with right over all trains:

Leave "A" 11:30 P.M.

" "C" 12:25 A.M.

" "E" 1:47 A.M.

Arrive "F" 2:22 A.M.

This order may be varied by specifying the kind of extra and the particular trains over which the extra shall or shall not have right. Trains over which the extra is thus given right must clear the time of the extra — minutes.

Form H.—Work Extra

(1) — works — until — between — and —.

Examples

(1) Eng. 202 works 7 A.M. to 6 P.M. between "D" and "E."

Under (1), the work extra must, whether standing or moving, protect itself against extras within the working limits in both directions as prescribed by rule. The time of regular trains must be cleared. This may be modified by adding:

(2) Not protecting against (eastward) extras.

(3) Not protecting against extras.

Under (2), the work extra will protect only against (westward) extras. The time of regular trains must be cleared.

Under (3), protection against extras is not required. The time of regular trains must be cleared.

When a work extra has been instructed by order to not protect against extra trains, and, afterward, it is desired to have it clear the track for (or protect itself

after a certain hour against) a designated extra, an order may be given in the following form:

(4) Work extra 292 clears (or protects against) Extra 76 east between "D" and "E" after 2:10 P.M.

Under (4), extra 76 east must not enter the working limits before 2:10 P.M., and will then run expecting to find the work extra clear of the main track (or protect itself), as the order may require.

To enable a work extra to work upon the time of a regular train, the following form will be used:

(5) Work Extra 292 protects against No. 55 (or — class trains), between "D" and "E."

Under (5), the work extra may work upon the time of the train or trains mentioned in the order, and must protect itself against such train or trains, as prescribed by Rule 99. The regular train or trains receiving the order will run expecting to find the work extra protecting itself.

When a work extra is to be given exclusive right over all trains the following form will be used:

(6) Work extra 292 has right over all trains between "D" and "E" 7 P.M. to 12 night.

This gives the work extra the exclusive right between the points designated between the times named.

Work extras must give way to all trains as promptly as practicable.

Whenever extra trains are run over working limits, they must be given a copy of the order sent to the work extra. Should the working order instruct a work extra to not protect against extra trains in one or both directions, extra trains must protect as prescribed by Rule 99, against the work extra; if the

order indicate that the work extra is protecting itself against other trains, they will run expecting to find the work extra protecting itself.

The working limits should be as short as practicable, to be changed as the progress of the work may require.

Form J.—Holding Order

Hold ———.

Examples

Hold No. 2.

Hold all (or ——— ward) trains.

When a train has been so held it must not proceed until the order to hold is annulled, or an order given to the operator in the form: “——— may go.”

These orders will be addressed to the operator and acknowledged in the usual manner, and will be delivered to conductors and enginemen of all trains affected.

Form J will only be used when necessary to hold trains until orders can be given, or in case of emergency.

Form K.—Annuling a Schedule or a Section

——— of ——— is annulled ——— to ———.

No. 1 of Feb. 29th is annulled “A” to “Z.”

2d No. 5 of Feb. 29th is annulled “E” to “G.”

The schedule or section annulled becomes void between the points named and cannot be restored.

Form L.—Annuling an Order

Order No. — is annulled.

Example

Order No. 10 is annulled.

If an order which is to be annulled has not been delivered to a train, the annulling order will be addressed to the operator, who will destroy all copies of the order annulled but his own and write on that:

Annulled by Order No. —.

An order which has been annulled must not be re-issued under its original number. •

Form M.—Annuling Part of an Order

That part of Order No. — reading — is annulled.

Example

That part of Order No. 10 reading No. 1 meet No. 2 at "S" is annulled.

Form P.—Superseding an Order or a Part of an Order

This order will be given by adding to prescribed forms the words "instead of —."

(1) — meet—at — instead of —.

(2) — has right over — — to — instead of —.

(3) — display signals for — — to — instead of —.

Examples

(1) No. 1 meet No. 2 at "C" instead of "B."

(2) No. 1 has right over No. 2 "G" to "R" instead of "X."

(3) No. 1 display signals for Eng. 85 "A" to "Z" instead of "G."

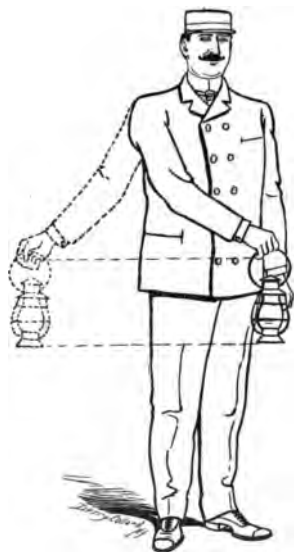
An order which has been superseded must not be reissued under its original number.

DIAGRAMS
OF
HAND, FLAG, AND LAMP
SIGNALS

ADOPTED APRIL 25, 1906

NOTE.

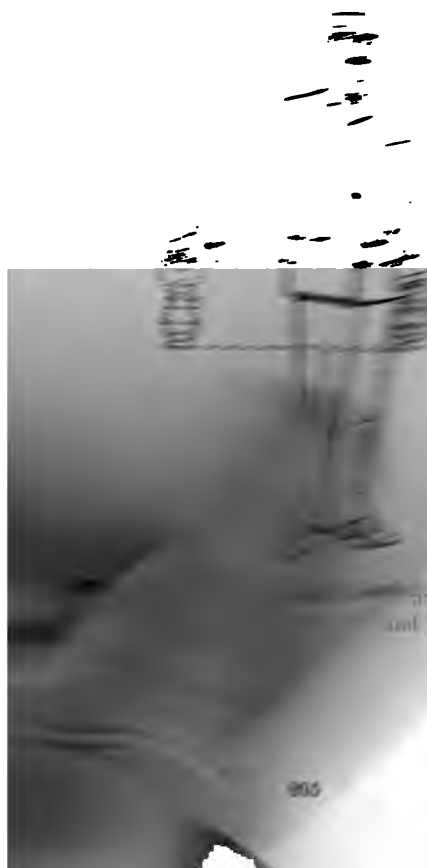
The hand, or a flag, moved the same as the lamp, as illustrated in the following diagrams, gives the same indication.



STOP.—Swung across the track. See Rule 12 (a).

NOTE.

The hand, or a flag, moved the same as the lamp illustrated in the following diagrams, gives the indication.



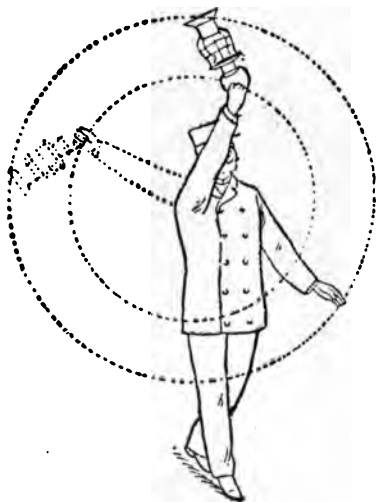
and 14.6



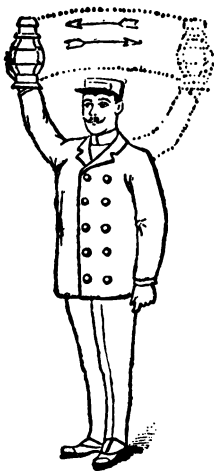
PROCEED.—Raised and lowered vertically. See Rule 12 (*b*).



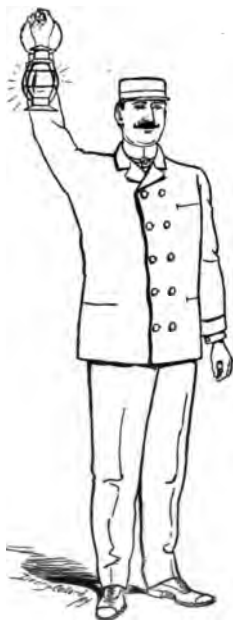
BACK.—Swung vertically in a circle at half arm's length across the track. See Rules 12 (*c*) and 14 (*h*).



TRAIN HAS PARTED.—Swung vertically in a circle at arm's length across the track. See Rules 12 (*d*) and 14 (*f*).



APPLY AIR BRAKES.—See Rule 12 (c).



RELEASE AIR BRAKES.—Held at arm's length above the head.
See Rules 12 (*f*) and D-12 (*f*).

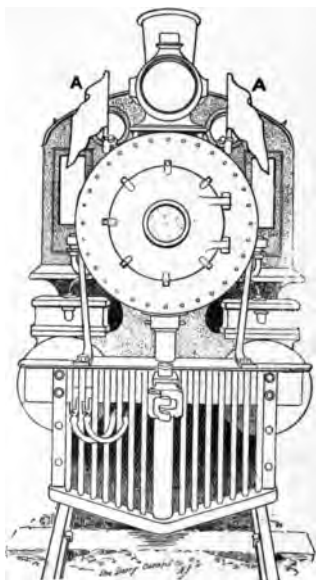
DIAGRAMS
OF
TRAIN SIGNALS

ADOPTED APRIL 25, 1906

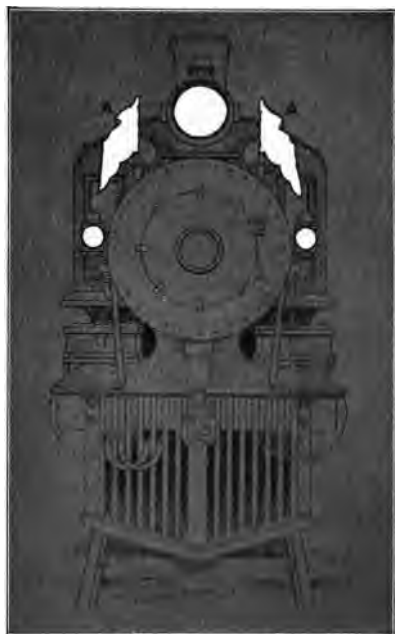
NOTES

The diagrams are intended to illustrate the general location of the train signals, not the exact manner in which they are to be attached.

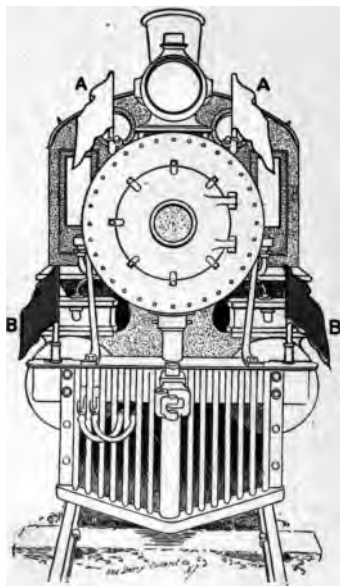
Combination lamps with four illuminated colored faces are represented in the diagrams.



ENGINE RUNNING FORWARD BY DAY AS AN EXTRA TRAIN
White flags at A A. See Rule 21.



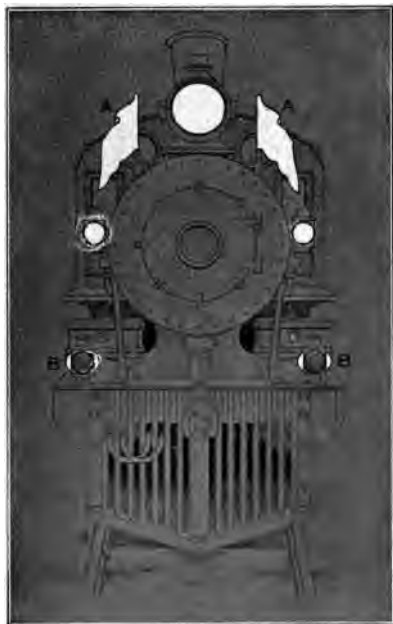
ENGINE RUNNING FORWARD BY NIGHT AS AN EXTRA TRAIN.
White lights and white flags at A A. See Rule 21.



ENGINE RUNNING BACKWARD BY DAY AS AN EXTRA TRAIN,
WITHOUT CARS OR AT THE REAR OF A TRAIN
PUSHING CARS.

White flags at A A. See Rule 21.

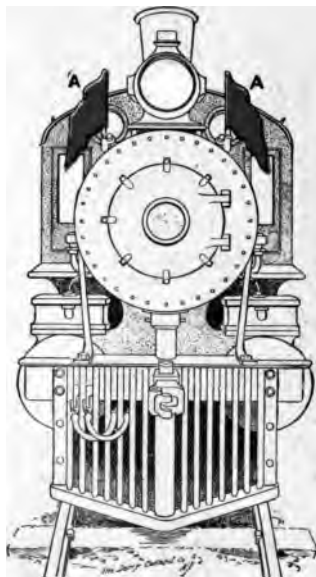
Green flags at B B, as markers. See Rule 19.



**ENGINE RUNNING BACKWARD BY NIGHT AS AN EXTRA TRAIN,
WITHOUT CARS OR AT THE REAR OF A TRAIN
PUSHING CARS.**

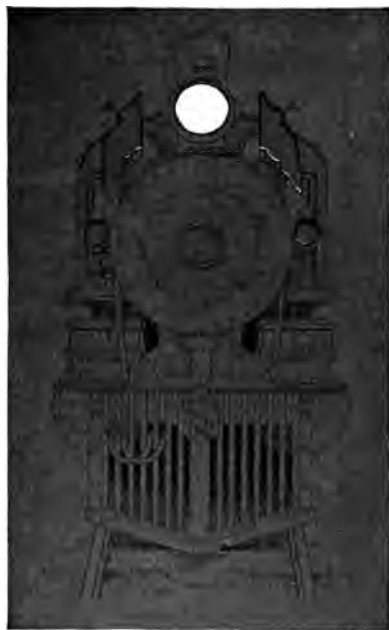
White lights and white flags at A A. See Rule 21.

Lights at B B, as markers, showing green at side and in direction engine is moving and red in opposite direction. See Rule 19.



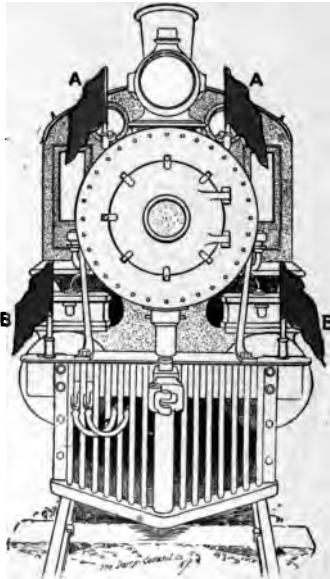
ENGINE RUNNING FORWARD BY DAY DISPLAYING SIGNALS
FOR A FOLLOWING SECTION.

Green flags at A A. See Rule 20.



**ENGINE RUNNING FORWARD AT NIGHT DISPLAYING SIGNALS
FOR A FOLLOWING SECTION.**

Green lights and green flags at A A. See Rule 20.



ENGINE RUNNING BACKWARD BY DAY, WITHOUT CARS OR
AT THE REAR OF A TRAIN PUSHING CARS, AND DIS-
PLAYING SIGNALS FOR A FOLLOWING SECTION.

Green flags at A A. See Rule 20.

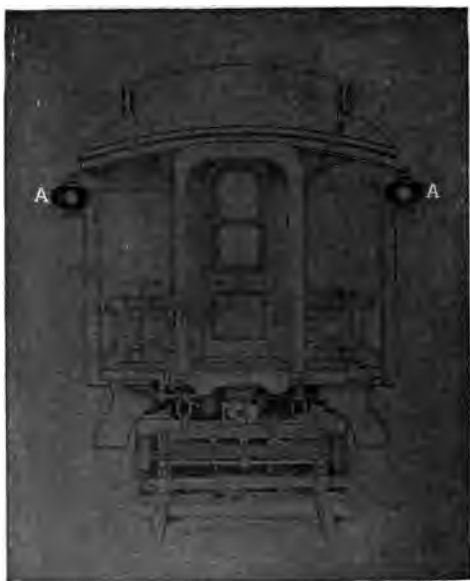
Green flags at B B, as markers. See Rule 19.



ENGINE RUNNING BACKWARD BY NIGHT, WITHOUT CARS
OR AT THE REAR OF A TRAIN PUSHING CARS, AND DIS-
PLAYING SIGNALS FOR A FOLLOWING SECTION.

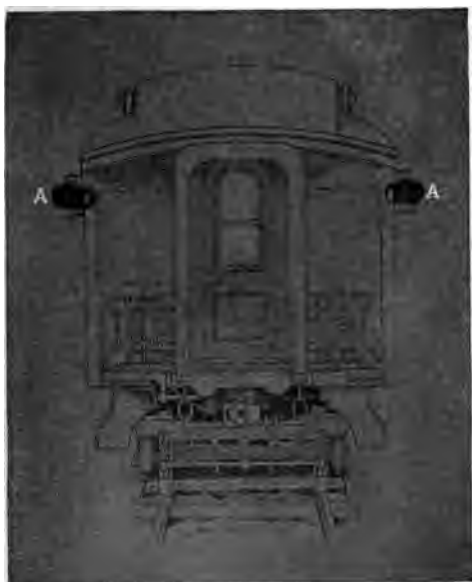
Green lights and green flags at A A. See Rule 20.

Lights at B B, as markers, showing green at side and in
direction engine is moving and red in opposite direction. See
Rule 19.



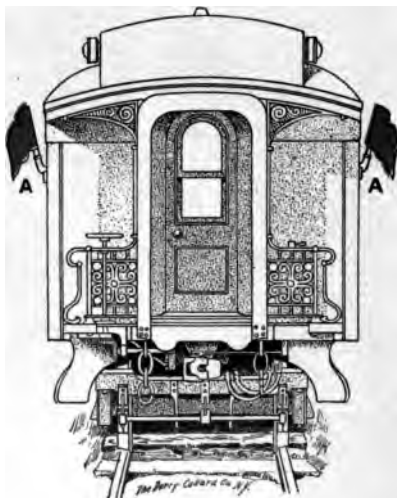
REAR OF TRAIN BY NIGHT WHILE RUNNING.

Lights at A A, as markers, showing green toward engine and side and red to rear. See Rule 19.



**REAR OF TRAIN BY NIGHT WHEN ON SIDING TO BE PASSED
BY ANOTHER TRAIN.**

Lights at A A, as markers, showing green toward engine,
side and to rear. See Rule 19.



REAR OF TRAIN BY DAY.
Green flags at A A, as markers. See Rule 19.



ENGINE RUNNING FORWARD BY DAY, WITHOUT CARS OR
AT THE REAR OF A TRAIN PUSHING CARS.
Green flags, as markers. See Rule 19.



ENGINE RUNNING FORWARD BY NIGHT, WITHOUT CARS OR
AT THE REAR OF A TRAIN PUSHING CARS.

Lights at A A, as markers, showing green to the front and
side and red to rear. See Rule 19.

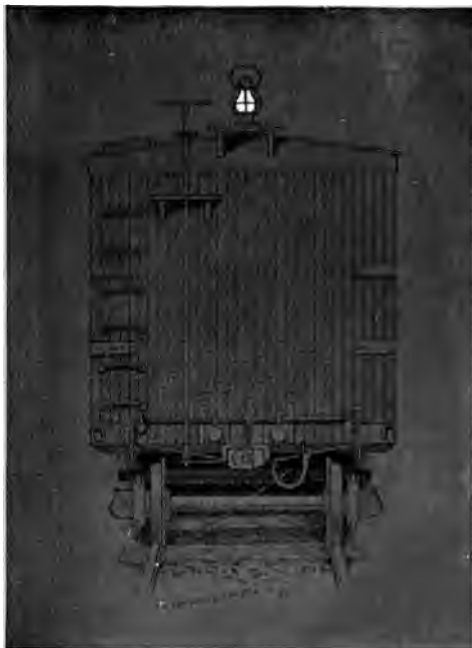


ENGINE RUNNING BACKWARD BY NIGHT WITHOUT CARS OR
AT THE FRONT OF A TRAIN PULLING CARS.

White light at A.



PASSENGER CARS BEING PUSHED BY AN ENGINE BY NIGHT.
White light on front of leading car. See Rule 24.



FREIGHT CARS BEING PUSHED BY AN ENGINE BY NIGHT.
White light on front of leading car. See Rule 24.

Standard Train Order Blank for 19 Order.

FORM 19		FORM 19
(NAME) COMPANY.		
TRAIN ORDER No. 10		
March 27 / 19 09		
To	At	
X (INITIALS) <i>Opr.</i> ; 1 45 A.M.		
..... Conductor and Engineman must each have a copy of this order.		
<div style="display: flex; justify-content: space-between;"> <i>Made Complete time</i> 5 16 P.M. <i>Black Opr.</i> </div>		

Standard Train Order Blank for 31 Order.

FORM 31		FORM 31			
(NAME) COMPANY. TRAIN ORDER No. 10 <div style="text-align: right;">March 17 19 01</div>					
To		At			
X (Initials.) Opr.; 1 45 A M					
..... Conductor and Engineman must each have a copy of this order.					
Repeated at 1 10 A M.					
Conductor	Engineman	Train	Made	Time	Opr.
Jones	Brown	45	Complete	1 30 a.m.	Black
	(Omit				
	this column				
	where				
	Engineman				
	is not				
	required				
	to sign.)				



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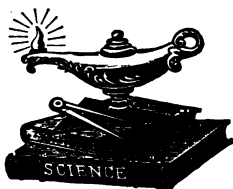
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